Thursday, May 20, 1982

NEWBRAIN FROM

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'We will make it work' Wilmot tells the CSA

by Kevin Cahill
THE deal that ICL is offering software houses will work this time. That was the message Robb Wdmot gave an audience of Computer Servicea Association members, slong with an acknowledgment that ICL had frequently got it wrong in the past.

He told the guests at the association's Annual General Meeting luncheon that ICL was now offering software and svatem houses unqualifed inclusion in the ICL software catalogue, which would be going to 86 countries. Previously ICL had attempted to vet each product offered by a non-ICL source.

He also offered the software houses the use of ICL premises uverseas, an offer which must be very attractive to the many software houses marooned in the stag-

nam waters of the UK economy. But Wilmot intends to be tough with those who break the, as yet

of industrial action over the intro-

disction of computer systems fol-

lowing the rejection of a new tech-

nology agreement by the biggest

eivid service union, the Civil and

Public Services Association, at its

annual conference in Brighton last

And the new hard line on tech-

nology was backed up by elections which saw left-wingers taking over

These moves followed votes on

motions censuring the existing

leadership over last year's pay

negotistions, which involved a

five-month strike, and over the

fact that the technology agreement

was signed without consultation

The CPSA's new general secre-

tary, Aliatair Graham, said the

agreement - which runs until the

next graceal election in two years'

expected from the Conservative

was the best that could be

the executive committee.

with members.

"There will be certain rules set down for behaviour, and disciplioary measures will be drawn up for those who break them," he said.

Wilmot also indicated that ICL was willing to go much further ing software and operating system specifications to the software houaes. The releasea would include interface specifications, he said, and he indicated that over 150 had been released so far.

There would be arrangements for software auppliers to test and run their products in conjunction with ICL on ICL equipment, and aoftware vendors would be javited in as conaultants on ICL turnkey projects, including work on the new Atlaa 10 and 25 range.

The offer of the use of ICL premises and the opportunity to go in with ICL to its customers' sites, unwritten, rules which will goven: appears to represent u far higher

Civil servants take a hard line

jecung it could only mean indust-

systems. He and supporting

speakers were sure members

would not strike over such an is-

GRAHAM . . . "Members would

with other vendors' offers. Digital Equipment, DEC, a piooeer of the idea that the parent supplied the hardware and systema

software and the software houses aupplied the applications software, produces a software directory, but vendors have to buy DEC kit to test and develop their systema. DEC has always advertised the

concept of third party beoefits and its president, Ken Olaen, said that the object of supplying equipment like DEC's was to help make a lot of people rich.
Wilmot echoed the same idea

when he said: "We are all going to

The reaction of the audieoce was mixed. Representatives inquired how old and unresolved disputea would be settled. Wilmot gave them names, winding up with hia own "if you can locate me". But

aystems could threaten jobs be-

contractors. Without an agreement

But Graham's opponents saw it

members would be defenceless.

IT city Europe

by Robert Parry
WITH the formation of an information technology policy advisory group, Milton Keynes is gearing up to become the Information Technology city of Europe.

Many leading lights of the UK

IT business make up the group, which is chaired by Sir Henry Chilver, vice-chancellor of Cranfield Institute of Technology and chairman of the NEDC's electroo-

ics development committee.
Milton Keynes' IT arrategy is to make it the foremost eity in Europe for the practical applica-tion of IT at work, in the home and in the community st large. The savisory group will review thia attategy, using their own ex-perience to identify opportunities or the city to set the pace.

Among the group members are ICL's Robb Wilmot, David Fair bairn of the NCC, Sir George Jefferson of British Telecom and Thorn EMI's Tom Moyer. The Depart-

TRALMILION KIANIS



CHILVER . . . chairman of Milton Keynes' info tech group.

ment of Industry ia represented by John Thynne, assistant secretary of the IT division. Eosys, formerly Urwick Nexos, was appointed to act as consultants last November.

The main element of the project the setting up of an Information Technology Exchange to be opened later in the year. It will act

resignations appeared to be con-

nected with an audit currently be-

ing carried out on the company's

The Texas manufacturer de-

clined to comment on the reasons

for the resignations. However, Da-

tapoint's auditors are currently

investigating a number of tintisual

third quarter result.

situationa involving Datapoint's

third quarter financial results.

community, giving advice and information, providing training and offering servires and equipment to

Other aspects include the provi

sion of a communications infraatructure using the existing cable network to bring TV to 20,000 households, and a trial optical

anginally recorded as sales, but

which were later refused by the

buyer. The revenues were

apparently recorded on Data-

point's hooks and were later can-

For the quarter ended January

21 Datapoint recorded a profit of

\$11.2 million, down from the

\$12.1 for the same quarter 1980-

with its parent's problems.

Diablo offwetti Hazeltine Iraa

MENTS 20 100 CENTRONICS

IMINIS (1811) GENTRONICS

Datapoint UK is not associated

Marketing chiefs quit their banking presence. centre un orders that were

nications network, with a service to 275 users initially. It will provide a means of moving gilt stocks from one stockholder to another without the need for transfers or certificates when the stockholders involved have accounts within the

charge to participate
The BET system is to be fin-

anced jointly by the Bank of England and the Stock Exchange.

The BET project is acheiluled to

months to get them to a

INSIDE THIS WEEK'S ISSUE

Intel strengthens hold on 16-bit market.....

than 30 jobs will be created. Sources at the Bank of England

stage".
"You'll be hearing something very soon," said a Bank of England spokesman.

systems would be a further step

govt loan scheme

the government over the loan guarantee scheme is threatening the hopes of hundreds of small company entrepreneurs in the compu-

The scheme, under which the government guarantees up to 80% of a loan made to a company by a ank, and which does not require that an entrepreneur commit personal security, ia threatened be-

Following evidence to a House Commons committee last week John McGregor, an Industry nister, many commentatora be leve that the government win an-

According to Phil Colyns, a director of Scribe Computers, which was recently set up with the intry set up with th aid of a government loan guar-antee, this would stop many people from starting out on their

"The whole point of the scheme



NEWS BRIEF

sell micros

CONTROL DATA is the latest

CDC to

Announcement expected on supply of system to Bank of England and Stock Exchange

Thursday, June 3, 1982 Number 811 30p

Three firms bank on gilt-edge contract

liats the 200 securities to be cov-

ered by the system, and also pro-

vides for drawing up regulations to

deal with the atorage and eventual

destruction of documenta relating

lo local authority stocks and

The Bank of England and Stock Exchange system for transfer of apecified securities, called BET,

will be based on two minicomput-

ers linked to a nationwide commu-

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The Technical People 🗥

THE prestigious contract to supply the Bank of England and the Stock Exchange with a computensed system for the transfer of gilt-edged securities should be awarded this week. It is almost five years since a committee was set up to study the project.

IBM, ICL and Tsadem are believed to be the three manufacturers on the short-list for the order. While the £1.25 million hardware value of the cootract is not enornious in the banking world, the kinder it beings with it will be a significant fillip to any of the three

An enabling Bill to authorise the etting up of the system obtained an unopposed Second Reading in the House of Lords last week. A change in the law was required to provide for the transfer of stock other thao by an "instrument of

The present procedure of transfer through a written instrument has caused considerable strain because of the increase in the activity in the gilt-adged market. The Bill

Even New York banks he

thortages and have begun recruit-

Subscribers wi heave to pay

The initial capital outlay is in the region of £1.25 million, and annual operating costs, including charges, will run at just over Il millio

take three years to go live. The first year involves the specification

indicated that a "fair amount" of new hardware is to be installed, and that negotiations with the three firms asked to tender lind reached a "commercially sensitive

and rommunications system, and

This step towards modernising both the Bank of England and the Stock Exchange was warmly welcontrol by peers on both sides of the House of Lords, and Lord Terrington (lad) said that computers already in use had proved extremely reliable and the new

The Stock Exchange has had a computerised settlements system for jobbers, called Talisman, for

some years.

Lord Bruce waated written into the Bill that the computer termi-Lack of DP staff in City

year, and more will be allowed in

£1/2m loss threatens

POSSIBLE change of heart by give £62 million to entirely new companies, over 300 of which are

grand total of £131 million, of which £500,000 has been lost.

cause of losses of over £500,000.

nounce changes, to include bor-rowers taking up part of the guarantee burden themselves.

was to give an entrepreneur a real uninhibited opportunity to build a company without the additional worry of putting up his home as a security as well."

Graduate register... Digital network gets going ... lew name in minis

38/39

Jobs: Pages 20/37



cility under construction in the Thames Valley.

A MAJOR conflict within the US prevented delivery of a Japanese uilt mainframe to Cliinu, has beeu resolved. Hitachi, which received an order in 1979 for its hig M180 to be delivered to an tinspe cified Ministry in Beijing, has said it will be delivered in two mouths.

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firm takes control

as favouring only the management They said any agreement had to be tied to basic employment condi-tioos to bring a shorter working week, earlier retirement and longer holidaya. They were angry at a clause which recognised that iobs would be lost as a result of

computer systems.

Hard words came in particular from Rod Bacon from the Department of Health and Social Security, who proposed the censure mo-tion over the technology agreement, "We will need rallies and meetings and in the end we will have to take massive industrial action," he said.
"New technology is the biggest

threat to workers in this country. We must take the lead and rauade the other civil service unions to change their minda and Summing up, Graham said

"Ordinary members simply won't take industrial action over an abstract concept of no job loss with completer systems.

trade union movement shows that it's ludicrous to say we're better off with no interim agreement at all. Who can say that Labour will storm back in two years' time and give us everything we want? I cer-

US micro

Alpha Micro systems were first launched into the UK market by

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3370 – SEVERAL A & B

inancing

The MSS staff left Con early 1980 to join Alpha Micro Systems UK, a company set up independently of the US manufacturer with sole distribution rights to the machine for the whole Europe, with Leslie Button a

CALIFORNIA based Alpha Micro Systems has acquired Alphi Micro Systems (Europe) from Alpha Micro Systems UK for \$900,000, including the UK network of 38 dealers.

including the sale of aoftware to the US company.

Computer Marketing, aubse-Software Systems in June 1979, programmers.

At the same time Alpha Micro

by Howard Karten SEVERAL tup marketing managers at Datapoint in the US made sudden resignutions last week. The

Systems UK has changed ita name to Alpha Computer Systems and will continue to handle certain key accounts for the machine. The company was making losses up to and including last October but made a net operating profit from January to April this year of £419,000 with an exceptional item

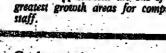
quently remailed Comma Compu-ters. Comma then bought Micro 12-man software house started two years previously by four ex-TOPS

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Printed in Great British by QB Limited, Sheepen Place, Cokhester CO3 31.7, and Lublished by IPC Limited, Electronic Press Ltd., Quadrant House, The Quadrant, Sutton, Surrey 5M2 5AS

in threatening to catch the City with a shortage of skilled computer staff. International banking operation of the city with a shortage of skilled computer staff. Staff which have been adequated trained number in their International banking operations to the City of London states at an annual compound rate of 37%, are the main feature of the pressure. "Staff which have been ade unately trained number in their documents at present rather than in their thousands as is the case with payroll programmers for example. "Finance applications are one of Although London is facing the great growth steas for com-"Finance applicationa are one of eading financial centre, it has more applicants wanting to bett any time previously. New puter staff, comparable to areas like database management systems. When we get new staff in, they go through a stiff training exercise and systems. When we get new staff in, they go through a stiff training exercise and it takes about 18 of competence — three years to make them fully familiar with our But London branches of overleas banks are having their own problems. A data processing manlanother leading New York bank lays that analysts who really unlays that analyst Finance applications are one of the greatest growth areas for computer



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5 You on better with and

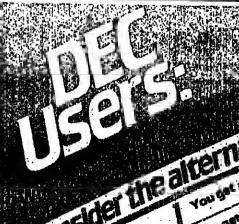
computer manufacturer to enter the microeoniputer market. It is to sell the Altos ACS8600 16-bit micro through its business centres in the US. Altos says it expects to ship between 3,000 and 5,000 units to CDC over the next five First shipments will be in December. There are no known plans to bring the machine to the UK. Payroll changes THE new sickness pay and benefit rulea come into force on July 14 and will immediately after over 20 million contracts of employment with far-reaching consequences for full extent of the changes will be clear when the Department of

Health and Social Security pub-lishes its employers' guidelines next month. Extel buoyant CITY-BASED information

supplier Extel showed gains in both profit and turnover for 1901/32. Sales rose 14.8% to 199 to million and profits went up 24% to £4.45 million. Extel is underatood to be pursating takenvers n the computer sector and has a microelectronic manufacturing fa-

China go-ahead

materials embargo which So lar the government has lent a



2 You get laster de consider . 3 You inve more money Vou get a lot more flexib

A NEW man has taken control of the day-to-day running of Bur-roughs in the US. Psul Stern, dent, has taken over aa president and chief operating officer.

He replaces DuRay Stromback,

who is tu retire at the end of the year. He will continue as vicechairman until then. Burroughs denies that he is being asked to

The move is seen by Wall Street sourcea as completing the man-agerial changes which began with the appointment of Michael Blumenthal as chairman 18 months ago. Since then Blumenthal has put outsiders into 20 of the top 25 positions at Burroughs.

Stromback was appointed to the presidency at the same time as Blumenthal became chairman and

changes in the monagerial structure of Burroughs, which will simplify the control of the com-pany and put Burroughs' full weight behind the "line of husiness' marketing policy which the company talked sbout eight years

ago. This divides Burroughs' mar-keting into specific industrial sec-tors rather than across the full

ducts at the recent UK meeting of

Of particular interest was the Lines software generator package, which Burroughs claims can cut system development time by up to

Holloway said the system was "very impressive", provided the claims could be substantiated. He added that his own company, Al-csn, would be having a demonstrausefulness. Lincs was developed by s New Zealand software house, and has been purchased by Burroughs for worldwide distribution.

Burroughs' Ofis I office automation system also attracted a loa nf interest, and the conference decided to form an Ofis interest group to work with Burroughs in this area.



BLUMENTHAL... Bringing in outsiders.

'Scrap Prestel index' -Consumer Council

subject to atringent enough testing pefore being introduced, and the indexing aystem is frustrating for users, according to a report published by the National Coosumer Council*.

The report, prepared by E. Scoti Maynes, professor of consumer economics at Cornell University in the US, says that British Telecom should introduce lower charges for private users in order to establish a domestic market.

Maynes cites several shortcom-ings of Prestel, including the lack of testing before material is introduced to the system, and advises that the hierarchical indexing system, designed for case of use, should be scrapped. Some subject headings are ambiguous; and there is nothing to warn users if the information they require is not availFifteen questions were devised

these questions were either highly satisfactory or highly unsatisfac-The main recommendations o the report include the replacement of the existing tree index with something which will minimise the possibility of wild goose chases save money, time and psychologi cal effort when searching for it formation, and maximise the probability that the consumer will

obtain the data required. Maynes envisages a system which will operate using several keywords which together might solve the consumer's problem with

A possible alternative would be the revision and expansion of the printed classified index, rather than reliance on the internal index.

*Prestel in Uses National Consumer Council, 13 Queen Ame's Gate, London SWt. 122.00.





CSA goes overseas—but turnout for software seminar disappoints

aimed at promoting British soft-ware expertise marred what was otherwise a successful first collective overseas exhibition venture by the Computing Services Associa-

The show was Europe Software most British companies that took sdvantage of the CSA's joint ex-hibit were well satisfied, according to director general Dr Doug

The show provided cheap low-tisk exposure to the Dutch market, although sny exhibitor expecting the event to live up to its grandiose name and attract s pan-European sudience would have been disappointed. Nearly all who

PORTABLE text entry terminals

from which blocks of text may be

dumped to full-blown word

Three manufacturers last week

the International Word Processing

ference Centre, London. Philips showed its new £850 So-

xhibition held at the Wembley

tellite system. It has s full-sized

word processor keyhoard with a

half-line liquid crystal displsy and

nstrated these terminals at

processors are taking off.

door to the main exhibition hall Eyeions remarked, "The British Embassy in the Hague were responsible for finding an audience for us, and they told us a week before the show that they were expecting 100 people, including more than 50 who had given written scceptances - all senior people from the Dutch industry. But only about 20 turned up. I don't know why. I suppose the CSA should have handled the invi-

Peter Davies, commercial counsellor with the Briush Embassy in the Hague, admitted that the turnout was disappointing. "More than 200 Dutch people were invited. We registered 38 people who tutned up but that included CSA members.

The Satellite has limited word processing facilities, hut Philips'

competitive advantage is based on the number of word processing

hureaux it has around the country.

Microwriter has been longer established in the market with its £485 hand-held terminal (see page 5). Although the machine has

more powerful word processing facilities than the Philips Sstellite

and can he connected to a video

"We intend to ask people who About the seminar held next sent written acceptances why they

copies of the seminar papers to all

Apart from Doug Eyeions, speakers at the seminar included CSA' president Roger Graham, Hoskyns Group marketing direc-tor Brindley Reynaud, and chair-man of F International Steve Shit-

Any disappointment Steve Shirley may have felt about the seminar wss more than compensated for by her delight with the interest in F International's ex-

"We have made more impact in Holland with our stand at Europe Software than we have made in the four years that we've been operathave picked up are like gold dust,"

German giant APTER five years of losses, West German electrical giant AEG

NEWS BRIEF

GEC may

buy West

Telefunken looks set to break up, with GEC of the UK a potential buyer of the company's electronics subsidiary.

AEG is nne of West Germany's biggest electrical manufacturing concerns with interests in a broad range of electronics and related fields. Although the dats process fields. Although the dats processing and electronies business is thought to be profitable, the consumer electronics divisions have persistently forced the company

More power

BRITISH minicomputer manufac-turer CTL has enhanced its IBM communications support. It has launched a more powerful version of the 3270 emulator. The new product will allow any CTL system using the company's ICE network to act as a cluster control. ler supporting up to eight worksta-

Software release

MINICOMPUTER manufacturer. Computer Automation is software package to link its SyFA users within an existing SNA net-work to a host IBM mainframe. SyNET, already installed st Rank Hovis McDougall's IBM-based centre, enables the user to collect data from SyFA node processon for storage on the host machine, or iniuate utilitics remotely.

Thousand sales

SALES of ICL's System 25 minicomputers have exceeded 1,000, less than a year after launch. The company has also reaffirmed System 25's place in it ment of additional facilities, in cluding a new processor with 50%.

Portable word processing terminals take off

the standard qwerty keyboard to mure efficient single-handed operation in a six-key keyboard. One exhibitor makes a living from allnwing different word Further Microwriter text can only processors to talk to each other through a medis conversion serbe dumped nn to two micro-base word processors — the Triumph-Adler Alphatronic and the Apple. Fitting half-way between the two in terms of dimensions is the vice. The company, Advanced Data Communications, also provides phototypesetting direct from word processors, and an optical new Sony Typecorder, weighing three pounds and powered by four rechargeable penlight batteries or car cigarlighter. The Typecorder charoctet recognition service which allows users to have text. scanned from a typewritten page and input directly into a word processor or converted to a floppy has a querty style keyboard and doubles as a dictstion machine cassette storage for entering and monitor or domestic televisinn set, doubles as a dictstion machine holding blocks of text which may lt is trying to convert users from using the same cassette drive. Its disc format for the major makes.

Thursday

June 3, 1982

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Intel strengthens hold on 16-bit market with five-year expansion plan

by Robart Parry
ON the heels of National Semiconductor's official release of its new cost of components for s typical lifebit spplication to less than ltslf tecture, and Jupan as an alternative that of an 8086-hased kit, and only hardware source. high performance microprocessor a little more than on 8-bit 8085 smily comes fighting talk from system.

moving from eight to 16 bits.
Withio the next five years, Intel

plans to introduce over 70 new processors and support chips. In the high performance micropro-cessor market these will include market segment oriented versions of the iAPX 86 family - integrsting tasks on to the processor chip particular applications such as

With its iAPX 186, a more powerful and highly integrated version of the 8086 16-bit processor now available for sampling, Intel claims a ten-fold improvement about 20 separate chips.
"It will allow Intel to penetrate

in performance/price ratio and the key markets," says Microproces-disappearance of the cost hurdle in sor and Development Systems sor and Development Systems Division general menoger Dave House, "and will have a profound business effect. It will convert a significant proportiun of the 8-bit

While House atill sees over the next few years, he feels 186 for new designs. "I expect the 186 to become the favourite over the oext couple of years."

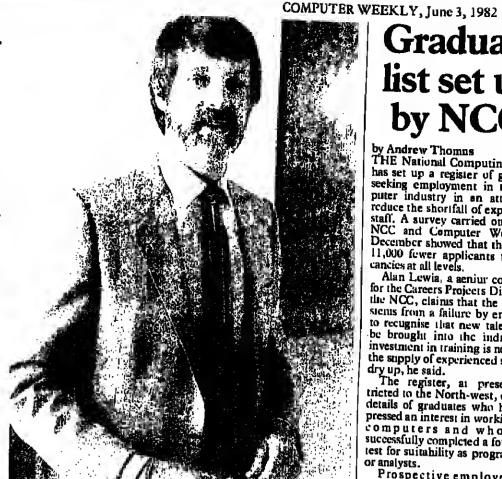
By pulling support functions on to the main 186 processor chip, Intel reckons it has reduced the NatSemi's new chips (see page 6) — "they are too late" — but sees two main rivals: Motorola,

'flie 186 ties up the range of

processors promised by Intel two years ago. These included the 186, 286 and 432 at the top end of the 16/32-hit scale. The 32-bit 432 has a different orchitecture from the others, an object-oriented architecture which House thinks will do-

Meanwhile, the march of devices using the 8086 architecture. targeted at data processing applica-tions and traceable back to the first microprocessor, Intel's 4004, con-tinues. A 32-bit device, the iAPX 386, is scheduled for 1984. It will be compatible with the earlier chips. Like the 286 it will hove an emulation mode enabling it to run emulation mode enabling it to run 8086 software "blindingly fast," says House.

The 386 will have a 32-bit bua, Mulubus II, and be able to address large data structures using 16-



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improved throughput

Graduate list set up

THE National Computing Centre has set up a register of graduates puter industry in an attempt to reduce the shortfall of experienced staff. A survey carried out by the NCC and Computer Weekly in December showed that there were 11,000 fewer applicants than va-cancies at all levels. Alan Lewia, a aeniur consultant

or the Careers Projects Division of the NCC, claims that the problem siems from a failure by employers to recugnise that new talent must be brought into the industry. If investment in training is not made, the supply of experienced staff will The register, as present restricted to the North-west, contains

details of graduates who have expressed an interest in working with computers and who have successfully completed a four-hour test for suitability as programmers Prospective employers are

offered a selectiun service, and are nished with a short-list of the five graduates deemed inost suit-

Govt accused of 'fudge and compromise' on data protection law MAYBE ALL by Our Parliamentary criticisms of features of the proposals. But he reported that there had been widespread acceptance THE government has refused to give any firm undertakings to in-clude data protection legislation in was a reasonable and balanced one. YOUR CPU the next parliameotary session. But Home Office Minister Timothy Raison again coolirmed that Bennett'a "tired platitudes" did not help, the Minister said. The government believed that legis-

Istion would prove right and tection procedures outlined in the

in the Commons of the government's White Paper on dets protection. Andrew Bennett (Lab, Stockport North) called the White Paper an example of "fudge and compromise" satisfying onbody. White Paper proved ineffective.
Robert Cryer (Lsb, Kclghley)
protested st the lsck of any provision in the White Paper for the
protection of the accumulation of Bennett said during Commons questions that the White Paper would not give genuine protection to the individual and was in danger of setting up a buresucracy which would achieve nothing. data in the £20 million special hranch computer. But Raison said it had been made clear in the European cunvention un the Raison acknowledged that the State Security were exempt from legislation.

BGS drops Logica as UK agent

Raison was replying to criticism

Nick Kenyoo, manager of Logi-ca's capacity planning division, ex-pressed surprise at the BGS deci-

aion to go it alone.

As far as I'm coocerned, we're
till oegotiatiog deals with BGS for their products. Beyond that I'm not prepared to comment," he

Robert Goldberg, BGS vicepresident and co-founder, was in
London last week for the start of
the UK campaign. He confirmed that his company was cutting out Logica. "I believe we can give a dealing with them direct," he said along with them direct, he said along the training and predictive training to the UK aspecially in the banking field. I believe that the UK is several years shead of is several years shead of the



US in this area."

Goldberg believes most latge users have the capability in perform their own capacity planning, and prefers to sell BGS products rather than offering one-off service.

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HP optimistic as its growth curve mounts

few years in small systems and the IBM market, including plug com-patible manufacturers, the other

But Hewlett-Packard's position in the market — with systems costing under \$300,000 — should leave it well placed to meet its widely stated ambition of becoming the third largest computer manufacturer behind IBM and Digital Equipment by 1985, according to Paul Ely, corporate bead of HP's computer division.

HP is where the growth is, says Ely, who predicts that by 1985 "sales of computer sytems costing between \$20,000 and \$300,000 will constitute half the total of all computer business and will equal sales in the mainframe market."

HP's 34% growth in 1981 put it in seventh place in terms of dollar heland most of the established mainframe makers. What distinguishes HP from the others (except DEC) is the fact

Burroughs.
On the face of it, HP's top-line computer, the HP 3000, has been

sange and Data General's MV 8000.

This could be viewed as a serious drawback in HP's ambidous plans, but Ely does not think so. "Not many business applications require 32-bit addressing. It is important, but it's not the whole issue — overall performance is more important."

The HP 3000 series 64 is rated at computer within the next few years. "The problem," says Ely, "Is now to change the operating sit."

HP is widely regarded as having taken the lead in the 32-bit chip set stakes when it announced its product at the International Solid State Circuits Conference in February this wear.

The HP 3000 series 64 is rated at over one million instructions per second, putting it well into the second. The previous leading product was Intel's iAPX 432, but HP ex-The HP 3000 series 64 is rated at over one million instructions per second, putting it well into the middle of IBM's 4300 range. "It offers twice the performance of the HP series 44 version, which itself was rated as twice as powerful as the series 40 machine. So in two the series 40 machine. So in two the series 40 machine. So in two the series 40 machine. The series 40 machine in the company's the series 40 machine.

by Kevan Pearson that of its rivals in the race – the WITH most of the growth in the computer industry over the next turers Sperry Univac, NCR and maintain upward compatibility HP

around for a long time, and even the top model does not allow 32-bit addressing, unlike DEC's VAX range and Data General's MV source. "The problem " save Rly source within the next few source."

the series 40 machine. So in two years we have offered a ratio of technical and acientific product improvement of four to one," says range where the need for 32-bit

machine in everything other than ducts in this market like Apollo that its growth rate is more than twice the industry average of 14%.

Its growth is also more than twice that its capability. The problem is that the company's going to compete head-on with

650 car

dealers on

viewdata



ELY . . . "Third largest by 1985."

them," explained Ely, "but they llustrate the point."

Of the Japanese threat, Ely thinks it will be beneficial to the industry in the long run. "The Japanese have opened a lot of eyes as to what is possible both in pro-

Nor does be think that they can take on IBM in a big way, and he cites IBM's flat profitability over

Gulf system

SALES BRIEF

Bank spends

£9 million on

information

THE Royal Bank of Scotland he placed £9.3 million of orders for the third phase of its programs of equipping branches for growing started with cash machine in 1977 and teller terminals in 1979, the bank is preparing to list tall (from next spring) £6.25 million of 1BM minis and screen £1.4 million of Case communications equipment and £1.65 million of Phillips printers.

They are to be used in a cu

tomer information system designed, for example, to speed a personal loan negotiations or a

print statements on demand

Ferranti switch

FERRANTI has won a £3 million contract the Foreign and Con-monwealth Office for a message

switching system based on ner Ferranti Argus 700-GC minis i Whitehall and Buckinghamshin

The system is to be fully open tional in 1984, replacing a large manual system in handling me sages over radio links, leased list

and the telex network worldwin

of Philips printers.

HAWKER Siddeley Dynamic Engineering has won a £500,000 contract for a distributed dats of lection system to be used to the Bani Yas power station being com-missioned in Abu Dhabi by John Brown Engineering. The systemuses HDSE Sequel microproces sors and software developed by its Central Electricity Generaling

Amdahl pips IBM

BRADFORD based Empire Stores has installed an eight-Mbya Amdahl 470V/7C roainframe to te place an IBM 370/158. The system has 12 channels and it include Amilahi's accelerator feature which sllows extra power to be called a and paid for as needed. The machine will run CMS teleproces sing software under VM and poduction work under DOS/VSE

B&B for WP

THE Bradfurd and Bingley Building Society is to install a Wang Oli 140 roodel III to haodle work processing, and is the society first step towards an electronic office. The initial deal is worth Subsystem lets users

by Kevon Pearson

Ten years on, in 1992, IRD SALES of robots in the US could predicts sales of over \$4 billion, at

£40,000 order

constant 1982 values, with almost one million robots installed. The US manufacturing industry PHILIPS has won a £40,000 order for a P4500 business information system from building contract is taking to robots on an increasing scale, says IRD president Kenneth Bosomworth. He cites worries about international competitiveness, especially with Japan, as



France puts £35m on computerised betting

with 11,000 terminals by Jack Gee
AN order worth 350 million francs
(£35 million) has been placed by
They will also be dealt with in real

(£35 million) has been placed by France's State-owned tote organi-sation, Pari-Mutuel, with Mstra and Peripheriques et Materiels de Controle, for a computerised beating system to be iostalled at 6,000 outlets covering the entire coun-

The two companies will supply 11,000 interactive teroinals and 6,000 concentrators over the next five years in a programme which is designed to boost receipts from one of the Freoch Exchequer's most prolitable sources of reveoue.

Pierre Carrus, director of Pari-Muidel, said: "The cost of sorting betting slips by hand is increasing will begin to operate them. so fast that we keep having to put up the level of the minimum stake.

This is discouraging bettors from putting their money on the horses.

"But operating costs with a computerised system will be al-

Doctors give go-ahead to Microwriter for disabled

y Boris Sedacca HE British Medical Association has given its stamp of approval to Microwriter, a hand-held word processor for use by disabled

The Microwriter, which costs £485, has been extended and de-veloped to help disabled people whose handicaps prevent them from communicating or writing without hindrance.

Text is input by means of a keyboard containing six keys. Characto a video monitor or domestic
the right hand. The thumb is used
to a video monitor or domestic
the right hand. The thumb is used
to a video monitor or domestic
to a video monitor or domestic
to a video monitor or domestic
Now the Microwriter company
has set up a charitable offshoot,
called the Poundation for Communication for the Disabled, which

memory, and this may be duotped voice-syr to cassette tape, Text may be prices.

finble rather than as soon as they mini requirement are the IBM 8100, ICL ME29 and Honeyvell DPS-6. Trials run with 8100s-summer on the £2-£3 million found them "extremely good in a number of applications," accordsupport distributed applications ing to management services chief such as order collection and stock control via up to 14 of the bigger and DPS-6 were also very accepta-

they become economically justi-

by Donald Keonett
CONSTRUCTION of one of the higgest private digital networks in the UK is to get under way later this year when Blue Circle Industry.

Switching: equipment includes the control of the private digital networks in the UK is to get under way later this year when Blue Circle Industry.

Switching: equipment includes the control of the private and the p separately, the new network is expected to save 4750,000 a year will be IBM's SNA, Ferguson

Switching equipment includes GEC Reliance SL-1 and British Felecom Monurch and Herald PABXs and Case telex message switches. Transmission links include 60-channel circuits between in a later phase, will support direct links from terminals and compu-work, which provide alternative ters run by the 80 largest of its routeing facilities to cope with line 4,000 customers. It will use anal-failures. The remaining sites are ogue links initially, handling linked by 12-channel circuits speech and data separately, and divided equally between speech will convert to digital links when and data. Contenders for the distributed

Ultimately the aim is to integrate all kinds of traffic including speech, data, facsimile, telex and IBM's 3705 communications teletex on to the one digital net-But even handling them plug-compatible equivalents from

says, but the company wants to avoid being restricted to IBM

Equipment evaluation team leader Simon Furey adds: "TTT gives you X25 and HDLC as well as SNA. It doesn't force you to go

my particular route." The company is concerned to standardise as far as possible withom restricting its future options. It is also concerned to buy packages that will need the minimum amount of additional effort to make them do the required job For that reason it has rejected the smaller data switches on the market, such as the Gandall PACX. For the same reason the com-

paoy has rejected the idea of trying to implement so open network scheme, although that is the ultimiste aim. "Ideally we would have on X25 network, but who has the architecture to do it?" he says, "We don't want to do any pioneering. We want packages, and until open network packages are on olfer we will use SNA and 3270

Blue Circle get digital New name in UK mini market by Revan Pearson

by Revan Pearson
A NEW traine in minicomputers
has entered the UK with TKT Computer Services becoming the sole UK distributor for Point 4

tured in the US, comprises three semble Dam General's lo-bit Nova and Eclipse machines. The design was originally based on Data Gen-eral's Nova architecture, but os the machines have developed they save moved apart. It is still possible to run Point 4's Iris operating computers and conversion tools are available to run Dars General software on Point 4 computers though they are not directly com-

TKT will not morket the machines to end users, but will supply them on sn OEM basis to the desicrship network it is cur-rently establishing. No end user price is available for the top line Alark 8 machine, but a typical end oser price on the middle range Mark 5 would be about £28,000 for a fully configured system including 128 Kbytes of memory,



CAD systems in UK

its competitors, he adds.

00 one processor, they are more

end of last month. Both systems are capable of ex-

Applicon has built its new range, the Series 4000, around three graphics processors and two workstations based on DEC equipment and operating systems.

Gerber's new system, Autograph, was built by taking the CPU out of Gerber's 1DS-80 and CAD system and breaking existing software into more pragmatic applications modules.

The Autograph processors can be huilt into a network by linking them together, to remote mainframes, or to Autograph's 1DS-80.

"The new systems are all the graphical language which provides more programming facilities.

Applicon germinated from the Apollo moon project in the US, which left a lot of unexploited technology in the public domain for all comers to exploit. It became one of the CAD/CAM leaders, and was eventually taken over by Schlumberger. Clients include Intel, which has 20 Applicon systems the data is transferred from the main database overy three days

which new systems are all the same so we can mass build them, whereas in the past they were built to order, a says Gerber UK general to order, a says Gerber UK general manager Chris Bailey. That will same on the past they were built out a CAD system, says Applicon marketing manager Mike Will manager on the viewdata system.

TALBOT Motor Company is going ahead with a viewdata system which will eventually be accessed from 650 Talbot and Peugeot dealers in the UK. The decision was made following a limited trial in which 30 dealers have used the aystem, ealled Vital, since last October.

The trial ran on a Rediffusio R1800/30 mini acting as an eight-port viewdata front-end proces-sor attoched to an Amdabl V6 mainframe. The mainframe runs the Adahos datahase management system and the Natural query language, also supplied by Adabas Systems. The links he-

vide, and Talbot is currently chnosing between a larger Redif-fusion machine and Modcomp and Aregon systems.

allow Gerber to undercut many of its competitors, he adds.

Bailey thinks the CAD/CAM

and Aregon systems manager Neil Campbell said the system would require 32 ports by the summer and 64 ports within 18 months. computer aided design systems.

Applicon, which offers users a single system for £68,000, and Gerber Systems Technology with a basic system for under £50,000, released products in the UK at the

orone to system crashes, he says.

The company has also negotiated a bulk-order rental agreeprone to system crashes, he says. panaion into networks more minal system will be four Autopowerful than the companies graphs linked together," be adds.

ment with Visionhire for the Philips 14-inch colour terminals Applicon's Series 4000.is that dealers will use. The total window-dressed with new software aimed at extending the users' ability to establish their own networks and databases. There is also a new Like a similar system installed

nications links and software.
Like a similar system installed graphics language which provides by BL. Cars, Vital will be used to

IBM machine speeds up firm's reactions

by Boris Sedacca
iMPROVED programmer productivity ou IBM's new architecture System 38 has enabled at least one user to develop applications and to react more quickly to his marketplace.

The company, Record Mer-chandiser, of Huyes, Middlesex, hos the biggest System 38 installation in the UK, o Model 5. Steve Nobbs, the company's financial director, said that his old System 3 Model 15 could not keep up with

Record Merchandiser has an annual turnover of £45 million, selling audio cassettes, records and ideo 1ape 10 large chain stores like Woolworth's and to specialised video retail outlets on a sale or

DEC LSI-11 users gained an up-grade path last month when Sur-

rey-based Arrow Computer

Built by Monolithie Systems of

Colorado, the Buccaneer allows

256K of memory without aban-

doning their 18-bit Q-bus peri-pherals.

With the Buccaneer, the proces-

sor can address four megabytes of

memory. Both 18-bit and 22-bit

ouses are built into the backplane

more than double over the next two years, and increase by a factor of 10 by 1992, according to a re-port by US based research agency

International Research De-

the U\$ will be \$315 million in 1982, giving an installed base of 11,300 units. By 1984, sales will reach almost \$640 million.

IRD predicts that robot sales in

by Kevan Pearson

and communicate through a peri- 22-bit bus controllers.

'Million robots by 1992'

return basis. The company's products have a short shelf-life and low unit values,

system older staff niembers would not go anywhere near the screeus

they even avoided the DP department. But now more people are using the screens, and this has resulted in a multiplier effect which has earned a lot of money

Record Merchandiser," he said. Nnbbs said that conversion aids on batch applications from System 3 went very smoothly, with 229 batch programs and 111 sorts takuig 16 man-weeks to convert. But conversion to interactive applica-

tions was not so successful. We had to convert 139 rogroms and this took much nger - about 34 man-weeks. It is not a good idea to develop System 3 batch applications to System 38 interactive working.

"We also had problems with our two IBM 3370 disc drives, both of

row's managing director Brian

the major reason for this.

of LSI-11 upgrade

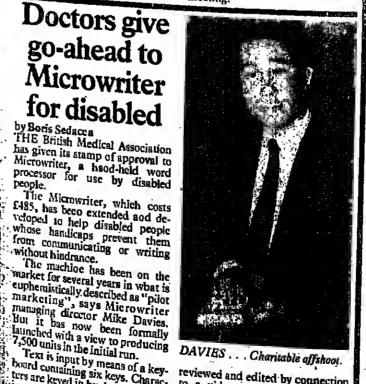
fillo,000, and later this year the system will be upgraded with the addition of an Alliance 250 system providing database facilities for office staff.

ICL buys in US

ICL has gone to Californian firm Xebec for supplies of disc control lers for its personal computer system. In a deal worth \$6 million pheral bus map board. This allows existing 18-bit DMA controllers and special purpose Q-bus in-terfaces to be used with the ex-Xebec will start delivery of the S1410 5.25-ineh Wincheste

Asb. Prices start from about £4,000 for the basic chassis with HUNTING Engineering in the installed a £38,000 data acquisited and analysis system from Micro Consultants of Kenley in Suries The system, based on a District Micro Consultants VHS [16] managing director Mike Davies. But it bas now been formally samples per second collected from managing director Mike Davies. But it bas now been formally samples per second collected from the indicator Mike Davies. But it bas now been formally samples per second collected from the indicator Mike Davies. But it bas now been formally samples per second collected from the indicator of the machioe has been on the cuphemistically described as "pilot managing director Mike Davies. But it bas now been formally acceleration, distance, pressure and temperature measurement for the machioe has been on the cuphemistically described as "pilot managing director Mike Davies. But it bas now been formally acceleration, distance, pressure in what is market for several years in what is mar the peripheral bus map board and back-plane. An LSI-Il processor card and up to two megabytes of memory can be plugged into the chassis, along with the 18-bit and

Longbarr Construction for Newcastle head office, Longbar bought a Philips P410 five years ago for payroll, and other accounting work. "The Robot Explosion, IRD, 30 High Street, Norwalk, CT 05851, US. 151pp.



then be keyed in by operators.

The equivalent of five A4 pages of typed cupy may be stored in the Microwriter's 8 Kbytes of price and adaptations including price and adaptations including price and adaptations including voice-synthesis of non-commen





MPSL for Sharp

MICROSOFTWARE house AicroCobol software. Over 40 8bit and 16-bit minis and microcomputers can now run MPSL application software.

For Sharp the deal moves it well into the software business with proven business application and vertical industry packages.

The deal is with Sharp itaclf, but

MPSL has access to some 30 dealers. "It's always nice to do business quite high up the distri-bution chain," says MPSL sales director David Blandford. "It gives us more commercial

NatSemi joins advanced microprocessor race

advanced microprocessor race. capability, which will be impledelayed launchings - National Semiconductor's NS16000 is on general release, with distribution promised for July.

The family of processors is based on a 32-bit internal architec-

ture and will include devices with eight, 16 and 32-bit external data buses. The first to appear will be MPSL has added the Sharp PC the 16032, an external 16 bit :hip, 3201 business micro to the range of hardware running its BOS/5 chip. NatSemi has silten for these now, says product manager Cal Rada, and samples have been with major US and European customers since last November.

The next inicroprocessor to appear will be the 16016, a bi-ling-nal version of the 16032 which also executes 8080 object code. It will be followed by the 32-bit device and CMOS versions. The new fum ly eventually will have seven CPUs backed up by a variety of

Major customers will have it by May, and a floating point unit (16081) and interrupt convoller (16201) by September, Ott-theshelf delivery is expected by the third or fourth quarter, says Rada. Future peripheral chips will be developed by NS16000 second

sources as well as by NatSemi. There are three so far — Fairchild, and the three will produce all of the chip family. Like Motorola's recently reinforced links with alternate sources for its 68000 microprocessor family, NatSemi's ties with its second sources are more of a partnership, a "true technology transfer" according to

More important than the relevant than the netual width nf the external data bus - is the softperipheral chips.

The first peripheral device will be the 16082 memory management ware support for the family, Rada says. All the CPUs will be fully software compatible and a number of

developed the CP/M micro operating system, and Whitesmiths, developers of Unix-like operating

The software deals bring in a variety of tools for system builders to develop applications on the 16000, with two or three operating systems and some ten compilers, says Rada. The family is supported velopment system, Starplex, and

rola with the 68000. "I don't think Intel will be the main competition", says Rada, despite the 8086's good lead in volume terms, The real battle will be between NatSemi and Mntorola.

It is a battle worth fighting. Nat-Senti estimates a world market worth \$750 milliun by 1985 for 16/32-bit chips and associated software, and is confident its 16000 series will take about 21% of this.



Two companies React to the mini market

A COMPUTER systems house and a consulting group have joined forces to take on minicomputer systems with a multi-uaer microcomputer-based eatimating and coutrol system.

The system, called React, is made up of software from Solihull-based P-E Consulting Group and hardware from CPS Data Systems of Birmingham.

CPS introduced its US manufactured hardware into the UK at the

tured hardware into the UK at the end of last year. A four-terminal system with 10 megabytes of hard disc and graphics printer to run the React software under the Ousis

by Robert Parry

says CPS commercial manager Nick Ashburner, "and we are offering a more sophisticated pack-age in terms of hardware and proven software than many of the mini-based products entrently of offer."

Laser aimed at low end of range

SURREY-BASED mini. system supplier Semaphore Computer Systems, of Godalming, has fol-lowed the trend of the big mini makers by releasing a microcom-puter to attack the bottom end of

part of a multi-user octwork. Laser uses either a Z80 8-bit processor or an 8086 16-bit chip, and comes with up to 256K of RAM. Winchester hard discs or Phoenix cartridge drives provide mass storage. The system is upgra-deable from the 8-bit version to the

There is a range of UK applica-tioo software to run under CP/M, MP/M or Ossis operating systems. Semaphore's managing director, Brian Young, favours Oasis, and sees it giving "solid multi-user handling capabilities" for the type of market he is siming at. "We are going for the lower end mini level application towarket" he

mini level application market," he says. "We already have a 16-bit mini - the Vanguard 7500 based on the Sperry range - which are fairly hely minis."

64K chip makes a comeback

US semiconductor manufacturers have started a comeback in 64K dynamic RAMs, with "second generation" chips technically more advanced that those from the Japanese companies

panese companies.

lotel, which put a 64K chip os the morket then withdrew because of productioo problems, has re-as-Semaphore is importing US-bullt boards and assembling them to sell on as the Laser, a microcomputer designed for mounced its entry, with full-scale production promised by the end of

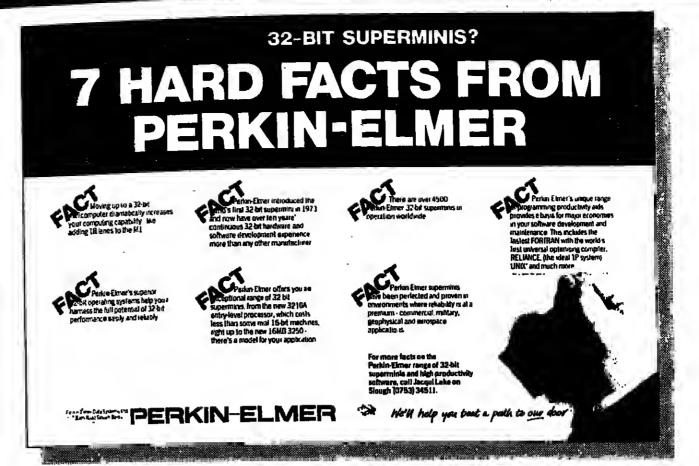
The chip, named 2164A, use lotel'a lateat fabrication techoology HMOS-III, to give 150 and dant memory cells are incorpo

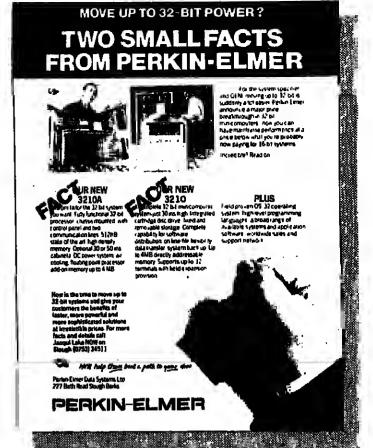
rated to give improved yields.

Other US chip makers coming on to the 64K scene are Mostek, Fairchild and National Semions ductors all of middle Areast to sain ductor, all of which expect to sain a significant share of the make atill dominated by the Japanese five: Fujitsu, Hitachi, Missubishi, NEC and Obi

Dealer appointed

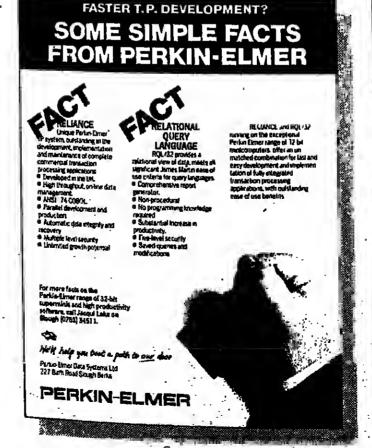
KINGSTON-BASED microcomputer supplier Compution his been appointed a dealer for the ACT Strius I. It will offer a consultation of the consultation The Laser machines can cope tancy service as well service factivities operator training and service factions, or 32 users wir the 8086.

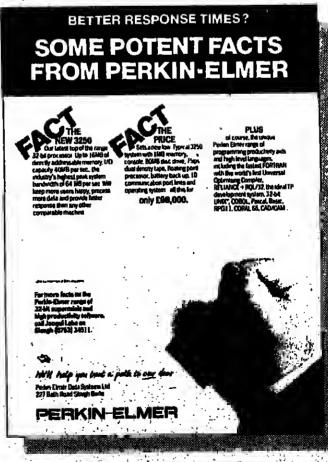


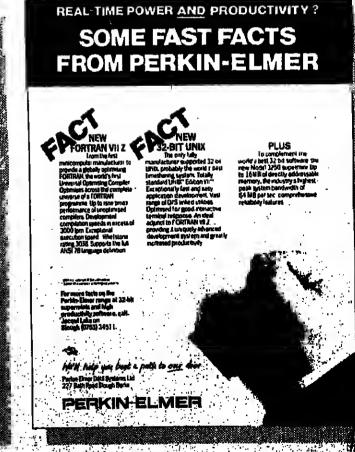


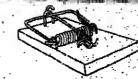
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the whole range af equipment and

A day at Campec North is the most

effective way af bringing yourself up to date in taday's computer

cansultants – anyone wha is professionally invalved with

ADDRESS

NORTH'82

A government-led computerisation effort is now in full swing in Singapore (writes a Special Correspondent). The national drive to computerise covers all areas of economic activity, including the launch of a multi-million dollar computerisation programme in the Civil Service. The success of this so-called second industrialisation aims to put Singapore on the same level as Japan by 1990, and represents major opportunities for foreign computer companies.

sation of Singapore in the last two to provide s base and an impetus of the worldwide requirement of effectiveness of the Economic Development Board, established to attract foreign investment. Now an attract foreign investment. Now an equally omnipotent National Com-puter Board (NCB) has been set up to promote and assist in the establishment, development and expan-quirement includes 13 mainframe sion of the computer services in-

lion Civil Service computerisation years. The latter touches anything fram formulating economic poli-cies to the liceosing of pets in the

ne tax processing), size of the contract will compel industry (economic them to pool their limited re-Labour (manpower sources to qualify for tendet. (income tax processing), Trade and Industry (economic forecasting), Health (online access to patients' files), Home Affairs (24-hour computer-aided response to police and emergency services), National Development (land use analysis), Communication, Environment, Education and Social Af-

more productive and cost-effective seas manufacturing aubsidiary. service by cutting down on man-Reflecting the parent company's power. In contrast to most confidence in the local availability Western bureaucracy, the Civil of components, skilled labout and Service in Singapore has been able to shed staff while expanding on services over the past three years.

good operating environment, it plans to increase its initial investment of £5 million to £12.5 million to

otent National Com- Far East's foremost computer

The estimated hardware re-683 visual display units and 208 charactet printers. The majority of the appliestion areas are online, a Japanese company in Singapore.
interactive systems using decentraThe maio carrut for Sotd has interactive systems using decentra-

The NCB will act as the sole buyer and seek out bulk purchase to reap the benefits of economies of scale. Presently the local soft-Its activities encompass the 10 ware industry is characterised by major government ministries: Fin-

However, the bulk of the order will still be handled by the major

Apple Computer has chosen called Tata-Elxsi, between Elxsi A major objective is to provide a Singapore to set up its first over- (20%), Tsta (55%) and the Singa-

Another major consideration is lion. Presently it is producing 75% the printed circuit board (PCB) for

> has opened its second overseas plant in Singapore. Out of ita ini-tial investment of £4 million, 30% is earmarked for R&D facilities, and represents the first substantial R&D project to be undertaked by

been the generous 10-year tax-free memory of 128K will be produced. Later other models sold under the

Sord has achieved an annua growth rate exceeding 100% in

The government has not been slow in having a finger in the pic. A recent £2.5 million joint venture called Tata-Elxai, between Elxsi be producing one of the world's fastest multiprucessor computers in Singapore. Elxsi California (set up by ex-IBM engineers) will pro-

computer user) will supply techni-

The new £500,000 computer can utilise up to eight central procesaing units working simultaneously with a speed of 20 million instructions per second and a main memory of 192 Mbytes. This is six times faster than the largest IBM mainframe computer and with a

larger espacity.
With at least two CPUs working multaneously - should one stop perating, another takes over this feature makes it especially suitable for organisations requiring computers to operate round the

'Singapore will be the only place in Asia outside Japan to have the capability to produce silicon wafers.'

clock. All features considered, the performance ratio of the multiple CPU Tata-Elxst computer is expected to be superior to any in the world. Prototypes are eurrently being tested in California.

The heavy investment and high technology required in computer manufacture mean that few local companies are able to venture into it. However, Otrona Singapore, a

ble microcomputer called Attache. But initially it will assemble only key modules auch as the main PCB, power aupply, keyboard and cathode ray display. The computer sells for \$4,500 in the US.

Financial District

turers with a base in Singapore are Digital Equipment and Far East Computers, a subsidiary of India's assembles a £7,500 word processor called Abacus Secretary.

Other manufacturers of peri-pheral equipment include Data Recording Heads Co (UK), and

boom, several multinational subsidiaries in the electronies industry have ehosen Singapore as a site to assemble and test large scale inte-grated circuits including 64K dy-namic RAMs.

Siemens of West Germany has statted production pegged at 20,000 fot its own consumption while National Semiconductor plans to manufacture about

The prize of the lot is the £15 wafer fabrication plant to be built by the Italian electronics giant SGS-Ates. When it comes on stream in 1983, Singapore would be the only place in Asia (outside Japan) to have the capability to

A common aspect of compute sstion of industry on the island

computerised stock conti

systema which have been intoduced in many firms. A new at more sophisticated area is Comp ter-Aided Design and Manus ture. Philips Singspore to installed a CAD system from to US Computer Vision Corp at a audio factory and plans to bring more original design work in Europe. The lattet slso plans start a time aharing CAD sync for sinsil companies on a burbasis in South-cast Asia to based in Singspore. The system suitable for mechanical drafts;

PCB layout and IC design, strike tal design and plant Isyoul. Many experts believe that Simp pote's inteose and well organic attempt to computerise will be her to achieve her industrial in financial government. With 1 8 business aector, lower co

banking system Singapore of outdo Hong Kong as the "Zest of the Par East" - and man Asian financial centre dealing a Asian dollar market, loan synd

Upgraded and computer will see Singapore coulded through the 1980s with an arms



UCL sets up software division

SYTEMS bouse Universal Com-puters Limited (UCL) has formed ibrary of application packages for the Pick operating system, run-ning on UCL's Ultimate range of

minicomputers.

The software division is to eoordinate the marketing of packages
developed by specialist software
houses sod provide support for
Pick and its utilities, such as the Recall report generator.

Sales profile

MARKETING services division of Dun & Bradstreet has launched Dun's Executive File, a confi-dential marketing ststistics pro-gramme service for elients. By their customers to the D&B data-base of industrial information on 200,000 active UK companies, a profile of potential and actual pur-chasers can be built up for use in devising sales strategies.

Digital deal

UNDER a co-operative marketing agreement, Digital Equipment Corp (DEC) is to distribute Miem Pocus system software products through its OEMs and direct sales and 350 16-bit microcomputers are MicroFocus' Level II Cobol, and intersctive programming tools Animator, Slideshow and Forms-



TRUBMAN . . . "Salesmen have to be higher calibre.

Cost reporting

AIMING at engineering managers and cost accountants involved in government contracts, ADP Network Services has launched a cost reporting system for project mansgers. Called Costrak, it produces wide range of reports including ing the project's schedule and cost variances, manpower loading, and a summary of cost/schedtde status.

Fast access

CROYDON-based software house Spider Software has launched the Apple II microcomputer which, it claims, offers a retrieval time of three seconds on a primary index search, Called Access, the system requires an Apple II system with 48K of memory and two disc drives, and costs £199.95 includ-

by Maggie McLening 'Grown-up' market calls for sharper, higher calibre salesmanship

purchaser's companies, to ensure

room," he suggested. "Although

be applied to the customer's parti-

cular steas of interest: if he was

Closing the deal, which was

rarely the job of the salesman, as it

was a waste of his time when

contractual details were normally

decided by mansgement, was the

Among the "carrot" incentives that could be used were special

functions such as user group meet-

represent an awful lot of money.

up, and soles techniques must beome more subtle and sophisticated to penetrate it. This was the message from Ken Trueinsn, director of RTZ Computer Services of Bristol, st a presentation to members of the Computing Ser-vices Association at a seminar last week on profitable software tapped at the highest and luwest levels, to provide maximum feed-

"Products have to be better because the market is now more sophisucsted, and salesmen have to be higher calibre, as well as sharper and more professional," he said. While Trueman's comments were addressed to those who sell software, purchasers of software would do well to be aware of he techniques used upon them.

Outlining each step of the sales ycle, he emphssised that selling a product such as high value finsn-cial software, which has a sale lead cause the prospective client won't know what questions to ask and a time of up to six months, the constant flow of uninformed visisalesman must constantly evaluate the likelihood of his success, to tors may spoil the user base", he svoid wasting time and money.

Correct identilication of the pardecision-maker he considered essential for application of

Truemsn emphasised that the salesman must restrain himself from telling the client everything about the product too early in the about the product 100 early in the ings or product-related scumars, sales cycle, otherwise he would hut Trueman favoured "stick" inlose the oppurtunity to keep in centives with penalties for not

signing now, such as an unpending price rise, extended deliveries or huw the opposition was doing.

He proposed that bridges for leavily-booked training courses. lished between the vendor's and

COMPUTER WEEKLY, June 3, 1982

On the subject of salesmen themselves. Trueman aaid be expected over £400,000 worth o business to be brought in by each of his genetal ledger salesmen per year, although Elwyn Wsreham, production manager of Systems Designers Ltd put the figure at between £30-40,000.

Wareham, apeaking on ssles or ganisation, said that a good rule of thumb was that the salesman ahould generate a minimum of three times his cost to keep

concerned about future deelopments, he should be shown He also emphasised the need for conatont feedback of information, the development team busily codand outlined the precsrious nature ing, even if the product was not of the software product sales man-"Don't give user visits until a

"Software products are unlike almost any other product being sold in that their design costs are very high while their reproduction costs are negligible", explsined Wareham. "The effect of this is thot extra soles go simost directly on to the bottom line; unfortuna tely the converse is also true, that shoringe of sales means an equivalent shuringe of profit". Colin Banfield, sales manager of

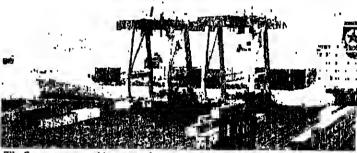
Logica, examined terms and pricing policies relative to the licensing or leasing arrangement. He estimated that the proportion of costs keting operation could be as high as 40% in a typical company.

Package aimed at exporters

mated 20,000 netive UK exporters will be available at the end of June from the Simplification of Internstional Trade Procedures Board (SITPRO). Funded by the government.

common standards of export documentation for international trade, plication psekages relating to ex-port. Ita launch of a micro-based export consignment processing and involeing aystem fills a gap at he lower cost end of the market where demand is increasing.

Called Spex, the package caters or "ra-ra" (roll-on, rall-off ferry),



deep sea, air and postal shipments, and can be used by almost any company or industry. It is menuand air transport, parcel post and driven to aid the first-time user, ated. The data can be output to and data may be extructed from dise files holding information on disc for reformatting. Written in CIS Cobol, Spex runs consignees, freight forwarders,

on any microcomputer supporting the CP/M or CP/M 86 operating systems, and any others with CIS Cobol compilers. It costs between £250 and £300 to end users.

MIDLECTRON Customisea Terminals

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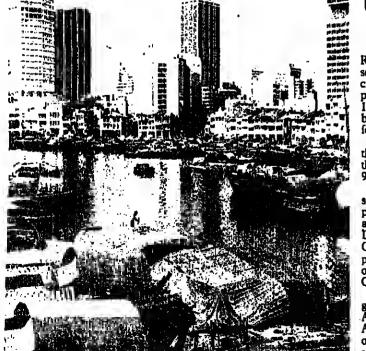
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SINGAPORE ... Three-year computerisation programme.

9,000 DP people needed by 199

RAPID expansion of the computer services industry in Singapore has created a severe shortage of computer personnel, estimated at 1,000. The result: rampsnt job-

bopping and a spiralling wage scale-for the industry. Recent estimates indicate that if he present trend goes unchecked, here may be a shortfall of up to

sently 35% of the 1,000 dats processing staff in Singapore are attached to either the Ministry of Defence System and Computer Organization, the National Computer Board or the government's own software house, Singapore Computer System.

As short term measure, the government bas recruited 300 sian graduates from the UK. Anstralia and New Zealand, It also offers computer science annual universities in the West worth up to £9,000: Cambridge, London and Manchester (UK), Harvard, oration with the French govern microcomputers in each of the £171 a threat to their livelihoods. scholarships at some of the top

puter science department to cater for the enlarged student intake. The government has also carried

out a three-pringed attack to tackle the long-term ahortage. From the Sixties joint technical training schemes with the various multinational corporations -Philips, Rollei (now in liquidation), and Tata - the government has graduated to form joint venture training institutes with foreign governmenta. This provides greater resources and accesa to higher forms of expertise that are normally beyond the acope of a

The Japan-Singapore Institute of Software Technology (JSIST) is a joint venture project to train up professionala to form the future : felt at the school level, when by the little difficulty in con-

production side of computers is given a boost through the Germangapore Institute of Production Technology (GSIPT). Based on the German aystem of technical training, this teaching factory will

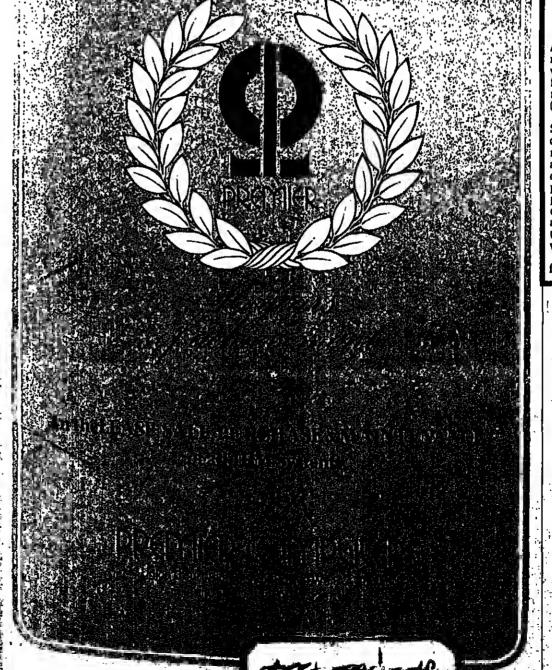
departments. Apple, for instance, loaned computers for staff to use at

On a less generous level, top civil servants are given 5% low interest loans of up to £1,500 to buy computera for use at home. But the greatest impact will be

strikes in 1976, none in 1977 1979, and only one in 1980. On the two industrial arbitrary courts was closed down for by On the issue of comp

training, this teaching factory will introduce more advanced expertise.

Other attempts to bring a greater awareness of computers take place at community centres, some companies and government departments. Apple for inspired has set up amall local training classes close to homes to acquaint them h puteta. This is to prepare in anticipated widespread use of puters in the manufactu service sectors.



Here's a question for every computer supplier on your new short list:

CONTRACTOR OF THE WILLIAM COMMINGORAL STORES OF STATEMENT OF THE STORES OF STATEMENT OF THE Inder Romes when the these when ""

You've been through it already. Ask this question and you'll learn how long it'll take the service engineer to arrive! Useful information. But, if you're going to depend more and more on your computer - which is what the short list is all about - not good enough. Not any more.

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unique in its flexibility and cost. Perhaps your short list should be even shorter. Tob sure, contact CTL. With this coupon, if you wish.

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Attention: Roger Fulton

Computer Technolog Limited

Zygal is dynamic

first half of last year had been ex-

ith its original Diablo of the product range with the inlusion of DEC and Fujitsu is seen

When the company floated its ares on the Unlisted Securities Market last year there was some criticism in financial circles shout the "thinness" of its trading base and its dependence on the Diablo

the shares have moved very little, and are still hovering just below his year's placing price of 78p, reflecting continued investor caution until the new products are

CW SHARES TABLE

COMPANY NEWS

Japan's big companies to benefit from fifth generation

The company is by far the big-

pan, with some 28% of the total

Stewart says that NEC maintains

semiconductors and office automa-Alex Stewart, a consultant with stockbrokers Henderson Croathgest microcomputer supplier in Ja-

job and perform well are going to thing that comes easily, I know, but I want to encourage you to look at the long term because that's where the real money is.'

The idea that abort-term profit-Fujitsu is a smaller company in every activity but mainframes, revolutionary, but it is vital to Stewart's context. His report is intended primarily as a guide to and, Stewart observes, has aough extra leverage from a aeries o ng success of American companies like Apple and Osborne.

Stewart saya Japan's Fifth Generation Project is creating the commercial and technical environment which the Japanese computer ndustry will work for the next five

The Japanese company best oised to benefit from the changes ifth Generation will bring is NEC

those who are familiar with the view that Fuiltsu is the technological leader. But Stewart says that NEC has provided the prototype strategy for all the other companies he reviews, including Fujitsh.

tal signal. As a result it has been able to achieve leadership in both risk to which the company has ex-

vanced chip designs.

Its other strength is marketing, which shows particularly in small systems and personal computers. Stewart says that Fujitsu is par-

cularly conscious of market orces, witness its ambitious deals with Amdahl, Siemens and ICL, with TRW in the States and Mat-

But the emphasis in most of the deals on selling larger machines leaves Fujitau behind companies second most likely company to benefit from the Fifth Generation plan. But Fujitsu bas been alower than arch-rival NBC to integrate like NEC, Melco (Mitsubishi) and Toshiba in small business avstems. and market integrated office Stewart says Fujitsu should renedy this deficiency when its

OEM deals based on IBM compat-

strategy, Stewart says that more than its other Japanese n'vuls, and replacement. The vulnerability of this strategy was exposed when its former OEM customer in the US, Itel, went under in the

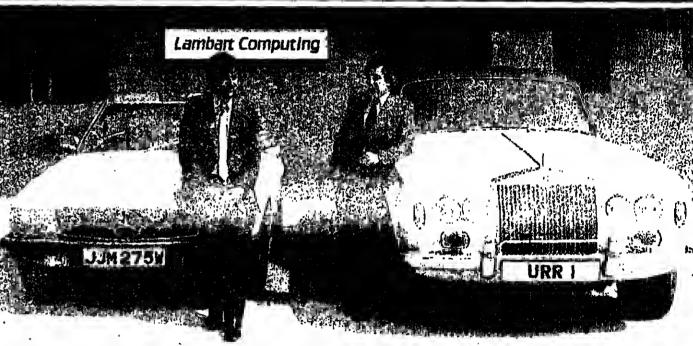
According to Stewart, the emought benefits in the shape of ighly advanced hardware.

Hitachi clearly wishes to estab semiconductor based mainframe business and the new markets

He summarises his view of Hita chi with the charming observation that the company chews, steadily

generation architecture, he says. Looking at Hitachi's long-term

cationa, Stewart says.



ONE way to advertise your success is o buy a Rolls Royce, os Gordon Lomond and Chive Bustram of Lain-

specialising in turnkey projects, three years ago, reached £5 million

und sales in the Middle Eost.

But success did not come easily. Lamond says that even three years

late nights and produce very sophis-ticated software before the moinframe suppliers took it seriously. But it won

os Lorand unit Bortraia, and to help

Called First Time Financing, the conference is aimed at those raising money for the first time at in the early days of running their own company. Further details from Sue Bonnell, IPC Conferences, Surrey House, Throwley Woy, Sunon, Surrey. Tel: 01-661 8040.



from Zygal. It's not that they're a new breed of matrix printers, so advanced, so functional that's the problem. Their reliability has never been questioned. It's true that they are very quiet in operation, easy-to-use, easy-to-carry. The sleek clean lines complement all decors. Fewer moving parts, A choice of 60 cps and 150 cps models in either keyboard or receive only configurations. Each with higher print.

quality, including descenders and underline.

So, what has been the problem? Cost, Considering their performance, the TermiNet 2000 series matrix printers from Zygal have always been excellent value. But, now, they are available at around, the same price as other more basic printers. But only from Zygal. And not for long. Send off the coupon.

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Index movement

The table thous the closing prices in London on Tuesday and in America on Monday. The Shari index is bused on the prices of the UK companies in the table. Highs and Lowe have been adjusted where necessary.

5 12 19 26 2 9 16 23 307 14 21 28 4 11 16 26 1 8 15 22 1 8 15 22 28 6 12 19 28 8 10 17 24 Oct Hov Dec Jen Feb Mar April May

State the goals, not your ideas for a solution

TECHNIQUES are the optional methods, products, ideas and structures which we design into the system exclusively for the purpose of saceting one or more attri-bute goala.

Sometimes people make use of techniques in order to express their gosls. This hah it of communication can have the undesirable effect of binding the designer to the technique rather than the real goals which someone intended to

This "misuse" of techniques ("I production planning") rather than the intended goals ("Yes, well what I really want is a faster, more accurate and more integrated production planning system than I have today") is partly due to ignor-

We may he ignorant of the dangers of binding the people who are going to find us answers ("tech-niques") to the answers we assume, p rhaps wrongly, to he the

We may not be aware of an alternative language in which we can directly express our real needs (like a formal measurable system ttribute specification language).

Let me therefore state some corollary principles to the Fourth: 1. If you want the hest possible

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PLESSEY

PERIPHERAL SYSTEMS

solution, you will probably end up Tom Gilb is an in late even If it does not solve your prob-

We need to give explicit instructions to our design team, or problem solving team or experts, rather along these lines: "I don't want you people bound to the solution areas which my limited technical competence might accidentally suggest to you. I want the problem solved in the best and most imagi-

"I don't really care how unusual the solution may seem. I want the solution or solutions (there may be more than one, and we wouldn't want the design team to ouss that point either!) that hest satisfy the goals I have stated."

There are an incredible amount combinations of solutions to almost any problem. Our designers need to be free to pull together good sets of them. They need to be

their special area of expertise. There is an incredible amount of new technology, both hardward l. If you want the hest possible and in terms of organisational solution, then state your goals, not ideas, which can be applied as so



ioni, lecturer and author on comput-

lutions to your problem. The rate of change and increase in this solutioo area is overwhelming.

You, probably don't know th best solution area, if you are the boss, even if you were a technical expert in the area a few years ago. And, initially, your own design team most probably do not have a final or a correct idea about the hest set of solutions which you can possibly get at this time.

What you want to do therefore is to make sure that they will he free to scout the professional knowledge area in search of good solutions. Don't tie them down; free them to be crestive in solving

Not only 'don't ue them down' hut make sure that they have the criterion (a well-formulated attribute goal specification) for recognising a really good solution when they bump into it.
And let them know that they can

freely suggest "radical" ideas when these ideas clearly meet your specified result (attribute) goals. Tom Gilb

DOWNTIME

HUMAN TOUCH! When all is not what it seems

SYSTEM in the context of a program product is an abstract

concept. You cannot see a system, but you can see a system working. Purchasing an abstraction re-quirea a mental agility that desmen cannot expect their customers to possess, so they resort to orking. And demonstration of should be all that those words imply. A demonstration in that it will not he the complete system. Working in the sense that any failure merely indicates that the salesman has not organised things

properly.

The corollary is that there are parts of the system that have not been seen working.

The salesman is in charge of a demonstration. He decides what will be demonstrated, where it will take place and often what data should be used. The demonstration team should have been rehearsed again and again so that they don't have to think what they are doing while they keep up the patter with the prospective cus-

It is convincing hut quite unnecessary for the normal production programs to be used for demonstration. If the options in the production programs not required are removed then the programs will probably operate more quickly and may well run on

Everything you see at a demonstration may not be what it seems. If the first thing a demonstrator does is to enter your company name to appear on output, do no

Running out of control CONTRARY to popular (and in hook) belief, computer selection procedures are seldom limited b technologies. Weighted evaluation points are increasingly hein

FOCUS

scored on such matters as he financial track record of the suppliers, their R&D capabilities

and their local and national pre-

ence.
Maps and balance sheets at

playing an important role is selection. The DP selection tea

must take note not only of futur

enhancement paths but the loc route map. User installations

Portsmouth, for example, would be encouraged by both the load supplier and company management to choose and support IBM.

And Putney users could hard

fail to take note of the presence

ICL, especially if their daily rous

nvolved driving across Putter Bridge in the rush hour.

On a nationwide selection bails

IBM would forcibly point out the they are one of the largest en-

oloyers in the UK computer industry. Burroughs, Honeywell and NCR would mention that the

support large-scale UK manufa

he expected to restate its extensive R&D development facilities in the

Senior management now expect the DP selection team to include:

inancial assessment of the com

peting suppliers. Company man

its approval for the selection unit

data covering the long-term vishility of all the contenders in

If the DP team is to retain its

selection powers, then its approach

to computer selection procedure must change. Less weighted point

should be extended to hardware

characteristics and performance mips differentials and termini

modularities, with more weight a

located to user-friendly system and office automation interfacing

in any case, many computer evaluation studies are now out of

cotrol. Selection panels total li

Timescales are measured in

nonths rather than weeks and in

all DP areas and activities.

Cliff Dilloway is on independent software, toxotion and payroll...

assume just because that is what happens that he did so. A sensible salesman would have entered your it out before ever you arrived.

Your demonstration will go through a number of stages, one leading on to another. Probably what you see is starting off fresh at each stage rather than using the data just created at the previous

are not intended to deceive. The demonstration is intended to put flesh on the verhal explanations, pictures and the brochures. lip-ups, finger trouble and anything that can go wrong are just about the norm of every "firsttime" on a computer.
The rehearsals, etc, are to pro-

vide the routine of a run-in system so that the viewer can actually earn something of the product. Proving that things can go wrong is a fool's game, so re-member that a demonstration is

what that word implies: a demon-

Cliff Dilloway

Land of the Rising IQ

THE average IQ of the Japanese has risen to 111, compared with about 100 in Britain, the US and according to a survey published in Nature magazine.

Even more worrying for us, be-cause of its implications for the computer industry, is the corollary statistic that 10% of the Japanese own IQs over 130, against a mere 2% in the UK.

As well as gaining intelligence the Japanese have been producing heavier babies, and growing taller. The gain in height is said to be

ONE of Computer Weekly's re-cent news items told of an EBC tender competition for the fessibil-

ity study leading to a database on REC regulations. The same story

went on to tell of a London-based private viewdata system which was

providing details of invitations to

Naturally enough, this led one

f our readers to call the second

Perhaps I should clarify that

called the viewdata system

No such luck. The database

study was not one of the tender

competitions listed.

There was a logical explanation.

The EEC tender competitions are taken from the EEC Journal

10 YEARS AGO

fast, a inint company was estab-lished by ICL and the Northern Ireland Ministry of Commerce to

From Computer Weekly of June 1, 1972 . . .

take over a factory producing sisted learning.

The reader thought that if he to a viewdata system. The last of

TO ensure into a f employees at punches, verifiers and keyboards ICL's plant at Castlereagh, Bel. Use af the computer in

tender from EEC countries.

about the first.

length with hody length remaining

Some Japanese attribute this hody distortion to the adoption of Western postures, like the upright

cross-legged squat on the floor inhihited leg development, or en-couraged a long body by forcing

the back to grow straight.

Probably nostalgic nonsense.
But it leads to the hope that perhaps this frightening explosion of IQ is also lopsided.

Supplement S, which deals with public works contracts from mem-

ber countries whereas the database

scientific research and applied technology projects. Still with me?

Perhaps somebody would care to follow the example of the Lon-

don firm and put the EEC's scien-

the three sets of supplements to

It is interesting that Supplement

S is mailed to subscribers daily

from Brussels for a charge of £61 a

year. You will not be surprised to

learn that the Commission is reluc-

... Use of the computer in education was boosted by a gov-

ernment programme of research and development in computer as-

tant to market it energetically.

will result from the study.

problems Tender world of EEC

Thurnham Hall, near Lancaster, may notice something unusual

is every word, delivered with mo-

I am told that some visitors have completed their tour of this stately home without realising that the earnest cavalier guiding them is, in operator, he would be able to get the details of the regulations data-base project and find out where to submit his bid.

the Journal deals with legislation and that, presumably, is to be taken care of by the database that will result from the study.

Model image

AN advert for a car rental company features the profile of a man who is the spitting image of Blue Ken, our Information Technology Minister. Of course it may be the real Ken, since he arems to have ao

Baker has recently been awarded a new Under-Secretary of State for Industry. He is John Butcher, one of the few MPs to receive largely favourable comment in Private Eye's "New Boys" column.

Chad

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS Thursday, June 3, 1982

IBM's reputation is at stake

Computer into the UK market have failed dismally. Companies in the UK have shown they will go to extraordinary lengths to get their hands on the machine.

Officially, IBM has refused to acknowledge the demand But because unofficial operators with an eye to opportunity continue to assume reaponsibility for marketing the IBM micro, IBM's own reputation is at riak. IBM is being dragged in whether it likes it or not.

Microcomputerland was the first UK company to aunounce that it had got sround IBM reatrictions on expurts from the US of the Personal Computer. Microcomputerland has since fragmented into offshoots, Microland and Microcomputersource. While Microcomputerland continucs to trade, Microland, under the direction of ex-sales director Doug Mudie, claims to have taken with it the

original middlemen suppliers to Microcomputerland.

Meanwhile, Microcomputersource, a dormant company initially act up by Microcomputerland and recently aold off to two ex-members of staff, has emphasised that it is quite independent from Microcomputerland and gets its IBM Personal Computers from a different source.



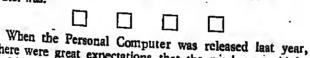
Other self-appointed distributors for the IBM Personal Computer include KGB Micros and Northamber. Most offer add-on memory and peripherals, including Winchester hard disc drives, which brings to mind IBM's early competitive battles with the plug-compatible peripheral manufacturers.

To customers buying from such operators, the name IBM will be the one which aticks in their minds. If these customers get their fingers burnt because of a petty squahble between small businessmen setting themselves up as unofficial distributors, or because a peripheral packs up, it is IBM they will look to for arbitration.

IBM's official position is that it does not want to put a product on the market which it cannot support.

Unofficially, it looks as though IBM is releasing its grip on those US suppliers who allow IBM machines which have passed through their books to find their way into the UK market, either unintentionally or deliberately by setting up strings of companies to buy and aell the machines.

The company is facing problems similar to those which rocked Apple with its European distributorship fiasco a few years ago, when nobody knew who the official Apple distri-



there were great expectations that the market would be legitimised. To some extent that has proved true. Many of the companies which have so avidly sought the machine in the UK are big-corporationa which are keen to see if the IBM label will meet their future requirementa.

But by leaving UK "distribution" - "test marketing" may be a more apt description - to any company which has the enterprise to import the machine into the UK, IBM has been caught in the aeamier aide of the personal computer

IBM finds itself with these UK problems because it cannot manufacture sufficient supplies to meet worldwide demand. It tried to skirt the problem by reatricting the product's release to the US. But it should be possible to step up production, even if the price is high

In the meantime, while it may not be able to control the actions of unofficial distributors, it cannot ignore the fact that the demand for its Personal Computer is there and being met by non-IBM sources. IBM, to support its reputation, should consider making available in the UK the necessary support staff for the product. It may not be the way IBM planned it, and it may not be as profitable as the company would bave wanted it to be, but it will save it some

It is now time for IBM to announce the Personal Computer in the UK and put an end to this confusing situation.

1984 and all that ...

THIS week's example of the strange things people say about computers was sent in hy Tony Orme, of Aldershot, who wins £5. Mr Pesrce and the other shop stewards have stready had a crash course in Computer programming. "It's a piece of cake," he said. "It's at easy as playing a TV game like Space invaders."

LETTERS I

Keep the patient alive

is quite right to say that software houses will be making a killing on payroll packages. However, there is an incipient symptom that may well turn on them in statutory sick

Statutory sick pay comes into effect in April 1983. Anyone buy-ing a payroll package today would be foolish not to require that they receive the necessary enhancements in good time and free of charge.
The detailed requirements for

statutory sick pay will not he pub-lished until July. The computer requirements will be non-trivial. It

quirements into the available program space in memory or for he extrs file data to be stored on

statutory sick pay (it may he re-covered against NI contributions) will he such a chore that software houses will eventually beaefit enormously. In the meantime users and suppliers need to take care that remedial treaument can be provided that will keep the patient alive and working.
CLIFF DILLOWAY

Micro ledger 'cowboys'

Polytechnic courses

Don't give the answers

micro ledgers made by cowboys (CW, May 13) strike some chords

In pursuit of the micro market and offering a turnkey on equipment, systems and support we encouoter two or three situations every month involving confused and angry would-be users —
"would-be" in the sense that they have bought kit and standard packages normally very cheaply and have failed to get systems up and running.
This is due in part to limitations

15) Philip Hunter stated incor-

rectly that the Polytechnic of North London provides no courses

in computer science as such. This

may be true of the Polytechnic of North London Computing Service (of which Peter Jeffreys is the

head), hut does not apply to the

department of Mathematics, Sta-

tistics and Computing (the head of

Just to put the record straight,

this Polytechnic does run a wide

These include a Post-Graduste

Diploma in applications of com-

FOR crying-out-loud, can you please stop publishing the answers

to problems in the Adventure

The whole point of the game is

that it poses problems which are

difficult to solve. If the answer is

known to any one of the problems before the problem is encountered

the enjoyment derived from solving that problem is forever lost.

of not ratting on whodunnit in Agatha Christie's Mousetrap and

other plays and stories of the same

People have created a tradition

game for computers.

variety of coursea in computing.

department being Dr Goodwin).

lack of support and "hand

In the important small business market our industry must realise the importance of strong systems and close personal attention to customers' needs. It costs - but the result is satisfaction, a good reference, and a continuing association with the client in succeeding years.

plus either mathematics or statis-

and computing.

In addition we run n runge ol

short evening courses in comput-

ing on topics such as computer appreciation, inicroprocessors, Co-bol, Pascal, Fortran, Comal, llasic, Further flasic and systems

If you wish to help people who are unable to solve some small part of an adventure then establish

some sort of private assistance or

sell sealed answers to individual problems with the proceeds going to some worthy charity, or perhaps pose fresh problems where the ans-

wers are clues to the answers in the

Adventure programs.

The orlginal programmers of the Adventure game, Willie Crowther, Don Woods, Kent Blackheir and Bob Supnik freely gave their crestivity for the coloursent of others.

CYRIL DRIMER

Managing director Team Computer Services,

DAVID HEARST wrote (CW, May 6) about the history and problems of the Scottish Microelectron-Calculating and keeping track of

ics Development Programme. While I would agree with much ol what was said, I feel that it creates a false picture of the overall state of educational computing in Scotland since SMDP is only one element of the total network.

Indeed, most of the problems which have been described have arisen because SMDP has been expected to be all things to all men.

In Scotland, as well as in England and Wales, the central agencies may eocourage and monitor changes in education, but it is the local authorities which finance, initiate and control almnst all the levelopments. Local authorities have provided

most of the hardware, facilities and anpower currently heing used in the development of computing their schools and colleges. This is not to supplement a lack of central provision, but hecause this development is seen as being a priority by the local education commit

therefore enclose an article describing the current situation in Scotland which I hope you will publish in an attempt 10 correct any misunderstandings created by Hearst's article. I have refrained as far as possible from adopting the

Scots' micro education role of apologist for SMDP, hecause there have already been too many public arguments about the failings or otherwise of SMDP.

COLIN R. MacLEAN Assistant adviser it Microelectronic technology Lothlan Regional Council

Departmont of Eduestion,

Space permitting, it is hoped to pub-lish the full text of MacLean's article at a later date. — Editor.

Faster even than Cray-2

1 WAS amused to read the front page article entitled "Fastest Compitter in the World" (CW, April

Users of the 64 x 64 DAP (Distributor Array Processor) here at QMC have measured performances of up to six times the Cray-1. So even if the Cray-2 materialises, it will not overtake the current perormance of the DAPI

D. PARKINSON Computer Centre Queen Mary College

SO I GOT THE CHIEF



I WAS AWAY FOR THE BANK HOLIDAY ... two-year full-time Higher National Diploma in mathematics, statistics

OP TO PROGRAM MY WEEKEND'S TV ON ..



.MY "FOOL PROOF "

. THERE IS NO SYSTEM





Busikess systems analysis and design MSc AND DIPLOMA COURSES 1962/83

Those one-year courses provide a luil academic and professional grounding deverting the theoretical and professional grounding overlines analysis. They several may be evaluable. Equiries in:

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M42 — General Purpose Paper Tape Reader/Punch.

M33 - Portable Paper Tape Reader.





IT'S EFFICIENT BUT IT BUTLER.



about their guide. His dress is perhaps a trifle odd, consisting of the robes of an Elizabethan Cavalier. He talks rather hoarsely, hut with clarity and precision. His audience has an only over the robes of the robes of the robes. study is a research project from the EEC Commission itself, details of which appear in Supplement C, the vehicle for information on

tionless lips and inscrutable face.

many fingers in so many pies.

Perhaps because of his wide range of extra-curricular activities,

the case of State organisations of ten exceed 2,000 man-hours of Presenting such elaborate it ports to management serves only to underline the belief that the DP team is both out of its mind and

depth.

Blowing the chief executive minds with reams of technical data and statistics could well blow his DPM's job, especially as, in many cases, the production of many cases, the production of the country cases, the production of the country cases. extensive reports serves only a cover the initial prejudice of the

inner selection team. thing more lavish than ! single screen full of data is suspect and suggests that the DP team not been able to evaluate the der not heen able to evaluate the and wood from the data trees. A short snappy report expresses confidence—the DP team in the selection, the supplier in his saling to deliver the goods, and the sense managers that they will wish spend minimal time on the property.

If such confidence is lacking then company management have little option but to hring in a independent consultant to assume the selection procedures.

Given the complexities of computer aelection exercise; un outside assistance could become inevitable and desirable for all computers and desirable for a

Alan Simply

Daily Telegrapi

ativity for the enjoyment of others: Your paper is doing the equivalent of using razors to slash old-mas-Until your publication began hlurting out the answers the same tradition was observable in respect · BILL WILLIAMS Data Highways Ltd, London, N10 of Adventure-type computer Teaching of

computing and the caption "New languages could make Ada obsolete says European survey" (Programmers. Page CW, May 13) gives the impression that the statement came from me, although of course the article reveals ntherwise

rticle reveals ntherwise.
You also misquoted me a bit regarding the teaching of computing science at schools. I actually said that, if computing science is to be taught at school then children going into science should be taught something like Pascal which hulids un set theory rather than Basic which is not well disciplined.

J. G. P. BARNES

SPI. International.

The Editor welcomes letters commenting on subjects published in Computer Weekly, or an original topics. All letters must be accompanied by the writer's rights and address, not necessarily for publicution, Letters may be cut.

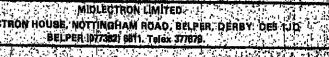
M43 — Paper Tape Reader/Purner with local Edit fac liftles.

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TELEX-MATE — Off line Telex Tape Preparation Unit.
Can be based in confinction with special terminals, typewriting, configure
Word Processors for easy preparation of Telex mediaages.

Contect: Janel Bell, Eric Pugh or Steve Hewitt - they have a solution tapetil





University tests VDU guinea pigs in their natural environment

aspects of working with VDUs and discomfort for a complete working associated new technology. Sn when I received an invitation from the British Computer Society to sit in on a meeting of the displays group, enticingly titled "Where dn you put your coffee?", I felt obliged to attend.

The section of the displays and questionnaires, Howarth and Istance hope to highlight the differences between the two working environments. Different job types will also be investigated as Istance

Two nf the speakers, Peter Howarth and Howell Istance of the Institute of Consumer Ergonomics at the University of Loughborough, are currently involved in a survey to identify what problems office autnmation introduces. Over 200 subjects at six sites using Two nf the speakers, Peter Howarth and Howell Istance of the

will also be investigated; as Istance

200 subjects at six sites using critical points often overlooked

Even after twenty years, trying

The King of Pac-Man I'LL bet you think you're pretty good at computer games like Space Invaders and Pac-Man. I can see you propped up against the you propped up against the machine gave up.

machine in the saloon bar of the Dog and Bucket, nonchalantly "I am the king of Pac-Man," announced a modest Schwibs. Can anyone claim to bave played a computer game for longer? The best I've seen is five hours, two minutes and one second of Advenknocking up a large senre to im-But you've got some way to go to beat Canadian Eric Schwihs. He started a game of Pac-Man at 9.45 minutes and one second of Adventure (score 335) - but you don't

PROGRAMMERS PAGE

MY regular reader will no doubt be aware that I have often gone on at great length about the health beauth about the health for both eye problems and physical culty lies in the fact that there are many problem factors involved with the introduction of new tech-nology and the humble VDU is

only one of them.
"Computer systems introduce change, not VDUs," ssys Istance. The Loughborough survey will investigate such parameters as the general level of office lighting, the amount of detail read from the screena, glare, reflections, noise and the office climate.

In addition to the comparisons drawn between the six convenrional and six automated offices, a special study of workers who alternate between word processors and typewriters will be carried out.

The subjects will provide unique data in that they form their own controls, enabling an accurate measurement to be made of the the two technologies.

Howarth claims that this survey will prove to be invaluable in that it involves subjects performing their normal jobs in their normal working location. Previous investigations have tended to be more sboratory-oriented, which may

throw their results into question. "The whole visual system must be measured," says Howarth.

your leg amputated you can often still experience an itchy toe. Perception lies in the brain, not the eyes or ears."

So what handy hints for com-fortable use of VDUs came out of the meeting? One on which all the participants agreed was that in a multi-screen environment, all eyestrain is more likely to result from the colour differences.

This must call into question the consoles operating in glorinus

The golden rule to apply when using any VDU is that the character size should be at least nne twoundredth of the eye-to-screen distance. One speaker announced that certain diaplaya - stroke refesh, where the entire screen i repainted seven times a second are the worst offenders when i comes to eyestrain and headaches:

"They quite often have a sticker on them which says 'Do not use this screen for more than three

All in all, an interesting meeting, but I still don't know where to

by Andrew Thoma

For Adventure-seeker

DESPITE the Dungeon Master's threat a few weeks ago to reduce me to a heap of ashes for helping you with your Adventure problems, here is another batch of questions. (Good lord, does this man know the meaning of fear? Ed.)

Bridget Harrison from Oxford

asks how one returns from the island with all the treasure (sap-phire, portrait, rug and ZS note), without sinking the beautiful pea-green boat? Bridget is also con-cerned as to what (if anything) one

oes with the ZS note. This sounds like an Adventure derivative - I don't remember an island in the version I used.

or Dungeon. I have also received offers of new versions. Now, the people offering cope descend on them were I to public to a computer myaelf

asking for a source for Adventur

But with people offering fee copies, and others wanting then, is there not some way of bringing them together? Suggestions on

by Philip Hunter

No sausage-machine solution with coding

automatic system builder lies in ollowing the example of the dota ictionaries, which provide the ability to build networks of information about a system.

One such system has recently peen offered to its users by Sperry Univac. Developed for internal use only, it was loter deemed safe and reliable enough for general ennsumption. Sperry claims that it is far more than a data dictionary, giving users the chance to match he requirements of a system with the realities of the detailed design down to the exposition of algorithms in paeudo-code, the speci-

some detail.

(RDP), and a language called RDL, which enable the design of a

up or down, networks can be created. Usually, however, RDL will be used to reflect the "top-

updated by redefining an element, or can be interrogated to elicit information about an element. An example in the case of an element which relates to several subprograms might be the name of the group assigned to code it, and the number of man-days allocated. The base can also be used to provide documentation: Each ele-

NINETY Given the fact that Y is pro-can you identify all ten of the in this alphanumeric addition ment can have a title specified, and a general description can be as long as the space available allows. At the bottom of a hierarchy sum? See page 37 if baffled

corporated in documentation. To element which includes the algo-rithm description can also provide information about its purpose This can be useful in making com parisions between the system s described in the distabase, and its

In fact, this is the chief wisdom of RDL: it cambles o specification to be verified. Clearly the system will not allow entries inconsist with its axioms, like for example two elements each specifying the otlicr on a lower level.

The system will provide som cross-reference, such as a list d sulprogmins or procedures the are affected by a particular algo-rithm or invoked by another Stibprogram.
So RDL allows a model of

system to be built, but does not It's offer any testing, or integration a code. Nor does it perform an automatic updsting of element offected by changes made also

At least RDP makes no fall claims, and is certainly! workmanlike tool for developer large systems involving med For example, RDL does not

ogress of the project of last subprogram. All it cao de s present is accept textual date of progress which can be updated £12 non-members,

PUZZLER ELEVEN

Computers in medicine. IEE. BCS. Royal Society, Loedon SW1. Details BCS external relations Dept.

Sales team reshuffle

Former manager of product marketing Gary Holtwick has be-

come division vice-president of

productive marketing. James Preston has been elected an officer

of the company, hy the board. His

area operations for domestic sales

Hackney). He was previously pro-

ject manager at the Dol's

Microprocessor Applications Pro-

gramme (MAP) and subsequently

advanced technology manager of Nexos Office Systems. Citytec is

the City Technology Centre,

which is aimed at increasing

microprocessor awareness in small firms in East London. The project

is sponsored by the London Bomugh of Hackney, the Depart-

ment of the Environment and

■ Susan Winaton has been ap-

pointed data processing manager at Package Programs, PPL. She

was formerly a consultant with

Software Architects. Also joining

the company is Ian Walker, wh

becomes a programmer for Acc

■ Jim Field has joined APL

*Plus to jointly lead the company's

software support and installation team with Peter Cyrinx. Field

previously worked for BP and 1. P Sharp Associates.

Chria Halford has joined Holbrook Business systems as a systems analyst. He previously

spent several years with Canadian provincial government as a projec Richard Palmer has become

head of customer troining with Ferranti. He was formerly a lieu-

Marines, most recently engaged in

E Kent Keller, president of the US company Jason Trent, has been appointed corporate PR

counsel for Electronic Conventions

Inc, in which capacity he will advise on publicity for the Wescon, Midcon and Mini/Micro shows,

Stephen Kirsh has moved to Nixdorf in the City of Lordin as a

sales executive selling the 8870 series of minicomputer systems in the London area. He joins from

Datassah witere he sold small busi-

oess systems, David Scotley hus

also become a sales executive with

Nixdorf, responsible for a wide area which includes Norlolk and

Suffolk. Previously he sold

■ Stan Kilvington has given up

his own company to take over res-ponsibility for customer and sales support with Advanced Systema.

minicomputers for Alpha Micro.

among others.

asset management systems.

at Storage Tech

domestic sales by Daniel Ellis, remains the same.

Zilog top men executive director of Citytec

THERE have been severol

marketing at Storsge Technology

The position of vice-president of

world-wide marketing has been created, and is held by John Scott.

Western area operations for

ZILOG has appointed former Sig

netics general manager Frane de Weeger president and chief execu-

tive officer. He replaces Manny

Fernandez, who left Zilog to form

tor in Santa Clara, California be-

fore joining Signetics in 1979. Be-

fore that he was a director of

Motorola's semiconductor group.

CENTRONICS Europe vice-president Terry Harris raised over £2,000 for the Save the Children Fund when he successfully completed the London Marathon in 3 hours, 2 minutes, 2 seconds. It was sometimes

seconds. It was something of an achievement for Harris, who had never run in a marathon before and who was labouring under the additional handicops of an injured ankle and stroined hamstrings. He was sponsored by a number of companies and individuals, including Centronics.

DIARY

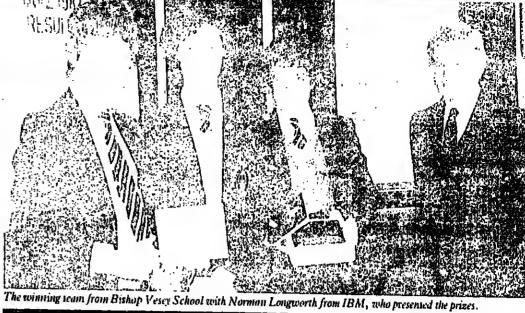
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JUNE 27-JULY 2

Cummercial value of computer education. BCS Advanced Programming group. Prudential Assurance, London ECI. 6.00. Details Mrs Theresa Diewon; 01-580

Local ar/ WP&OA SF form Churc Computer-aided design of filter networks. Second IRE vacation achool at University of Basex. Details IBB, 01-240 1871.



■ Jack Boardman has been appointed sales manager at RUT consultant with Reed, Stead, Mortants (Computer and Financial) Business Equipment. He was for-rell. He will specialise in VM, has been promoted from sales merly dealer sales manager at TEC DOS/VSE and multiple 4300 envi-

defence systems equipment arm of Plessey as director of overseas operations. He was formerly defence electronics specialist consul-tant at PA Management Consul-

ronments. He was previously tech-nical manager with P&O Compu-

Richard Price has been appointed an executive director of European Marketing Consultants.

■ Peter Boyee is sales support engineer for Engineering Compu-Services, responsible for the srea between London and Birmingham cast of the M5. He was formerly sn application engineer with Societé Genevoise at Newport

Midlands school quiz

Group's quiz competition this year, answering questions which ranged from "What is the name given to a single binary digit?" tn "What is the name of a system of workstations connected to a central master computer and backing

The contest was won by Bishop Vesey School, Birmingham, which received the IBM Schools Computing Cup, a cheque for £100 and Sioclair ZX81. Team members son officer Norman Longworth: Stuart Cheshire, Nicholas Tingle and Andrew Jones - were swarded peosets from IBM and a

■ Ian Hearn-Phillips has become European technical support manfacturer Priam, and is based in Reading. He was previously with Tandon as international product support manager.

■ Tim Shears has joined MSA as a systems consultant, from Forest Accounting where he was senior accounting recruitment consul-



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for portability is still no joke lT is no joke transferring a large suite of programs from one machine to another. And I know what I'm talking about. I spent s year writing machine-independent Fortran subroutines for a large project control system. The concept of program portability germinated from experiences gained in writing Fortran subroutines for general scientific applications. People like the Atomic Energy Research Establishment at Harwell and the Numerical Algorithms Group at Oxford have been producing libraries of scientific subroutines in Fortran for about two decades now, and have had time to digest much feedback from

Early efforts in machine portability were inevitably somewhat clumsy and bug-ridden, but now the standard of code is high, with NAG for example devoting much effort to resung.

There are also large engineering in Fortran, with machine independence a prerequisite. As a result many of the problems of program portability can be understood by looking at Fortran.

One is the looseness of the most use: Ansi 66 and Fortran 77. This means that a subset of these stan-dards must be used if real portability is to be achieved.

Then there is the very difference Harwell scientists have been writing scientific sub-routines in Fortran for between the two standards. Certain facilities available with Fortran Ansi 66 have been left out of Fortran 77, elther because they were not much used, or beesuse they were considered ugly by the purists, difficult to implement, or not commensurate with the foreseen development of the lan-

In fact Furtran 77 keeps certain facillues only to retain compatibility with earlier standards like Ansi 66. These include the intrinsic functions such as FLOAT, which converts an integer into a real while many micmcomputers only number. Clearly these are best left out pf any portable program aince they are likely to be dropped from word size determines the size of future standards. After all, true integer that can be stored, the acportability extends into the fourth cursey of calculations involving dimeoslois programs about be real numbers, and the number of machine handles these by sticking

been chosen and adhered to, other serious problems arise, and these, I believe, can be classified under two headings: word size and

Word size affects the portability of arithmetic operations, and of comparison between character Data 7600 allows 60-bit words,

characters that can be held in one

Machine idiosyncrasies pose a number of problems, a serious one

being the representation of charac-ters. Fortran allows charactera to be compared with numerical values - you could hardly wish for a more machine dependent ac-

Uoder the same problem heading come statements or arith-

that the call at machine level need only consist of the first address and the number of parameters.

But compilers vary, so it is importaot to be consistent in use of parameters, avoiding, for example, assigning an integer value to a parameter in the calling program, only to use it as a real number in

the routine being called.

This compendium of the pmb lems involved shows that complete portability is impossible to achieve by writing Fortran alone - allowance has to be made for the parti-

This has long been realised by designers of large packages for use on different computers, who came up with the idea of the preproces-sor. This scts as a high-level compiler, pinducing Fortran code in the dialect of the local target machine from some prespecified

Several Isrge application suites have been written in a home-built versioo of Fortran, using a series of dedicated preprocessors to coovert the code into the dialects f the various machines on which

the software is to be implemented. In theory this allows the promer writing code to be certaio that it will successfully compile which a preporocessor has been

Word size and arithmetic precision are guaranteed: for example the programmer can specify an in teger precision of 16 bits independent of any computer. The preprocessor concerned will scramble code using this integer into local Fortran that will gusrantee this precision whatever the word size available. Clearly different action has to be taken for an 8-bit machine from that for a 64-bit

The trouble with preprocessors is that they themselves take time to write and test, and a new one has to be written every time the software thoy serve is to be implemented on a new machine. But they are useful for producing machine independent programs and they can enable relatively inexperienced programmers to gain ex-

the design for a large complex system, and have the computer generate the code and documentation. There are simple systems where a goal can be specified, a proverbial handle turned, and an algorithm produced, but these fall short of converting complex needs into detailed design.

A more likely path towards the

fication of parameters and the re-

turn of values by subprograms. Before examining the strengtha and shortcomings of Univac's new tool, it is worth looking at it in

It consists of a Requirements and Development Processor elements which refer to other elements at higher and lower levels.

As it is possible for more than one element at ooe level to refer to the same element in the next level down" design of a system starting with a single lead element and yielding a hierarchy.

The finished database can be

say, every week. Still, the idea of linking all kre of system development is a soo one. There is the prospect of sub-matic verification of each level of design, eventually culminating a the whole system:

> SIXTY SEVENT

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The rules of regional development policy keep changing under successive government administrations. In this four-page special report, DAVID CASEY highlights the various grants and development support schemes available from local and central government in four regions.

How changes in regional aid rules have held back Britain

of incentive.

automatic capital grants, but this

concession has been reduced pro-

gressively so that new investment

after August 1982 receives no

All three classes of assisted area

are still eligible for aelective as-

sistance, a provision of the 1972

Industry Act. There is no auto-

matic right to funding: a company

must demonstrate that the invest-

ment would not otherwise have been made, that it would have

been at a lower level, or delayed.

Discretionary grants to encourage

employment are awarded on a

similar basis, the criterion being

that a company moving to an us-

grant from central government.

game between successive govern- administration of 1951. ments at Whitehall, regional policy has changed direction with monotonous regularity since the war. Not content with playing to a single set of rules, Ministers feel free to change the size of the court the game is in progress.

While no government with an eye to the ballot box would samit this was true, constantly changing regional assistance programmes may actually serve to defeat the objective for which they were created. Yet the approach to regional sid is a key element in national economic strategy: for almost 40 years, complete regions have con-strained Britain's rate of growth.

By 1945, six years of military action had taken their toll on the industrial structure of Britain, accentuating the economic prob-lems ereated a decade earlier. An opperent surge in industrial production concealed pockets within the national economy where out-put had declined and unemploy-

meot was again on the increase. A system of grant aid for comparties moving into these underprivuleged regions was the Attlee gov-ernment's response to the problem

Whatever the nature of the Whatever the mature of the Sir Keith Joseph as Industry financial carrot, however, there Secretary in July 1979 reduced the was a corresponding stick to be wielded in Whitehall. Factory hudding in the economically stable London and South-east became subject to development permis designed to discourage major new

Declining demand during the 1960s for shipbuilding, coal and steelmaking did little to stimulate development in the UK's assisted areas. More positive action, in the form of grants up to 45% of capital cost under the 1966 Labour government, immediately attracted companies to the priority regions, but created areas of economic

blight in their wake.
On one side of the regional boundary business appeared to thrive, while only a few yards sway, factories were idle for the lack of incentives.

Progressively graduating the assistance available to a region has belped to remove many of the snomalies of financial assistance. and is the vehicle used to fine-tune Development Areas qualify for maximum assistance, attracting

The maxition position of region gram for basic Development Areas by 5%, to 15%, these locutions funding depends on the source Statutory grants for SDA and Di regions. Rather than increase the statutory aid to the SDAs, the policy of the present government of a project is reduced still further has been to reduce the assistance For every £1 of gross investmenting elsewhere, increasing the margin an SDA by a company paying 525 corporation tax, the real con-Prior to 1979, Intermediate reduced to 20p. All other forms of assistance are treated as trading Areas - a bond surrounding most Development and Special Deincome, however, increasing a velopment Areas - qualified for company's total liability for tax.

Among the miscelluny of aid for vhich a business might qualify as loans on preferential terms from the European Coal and Steel Com munity fund in the EEC. Areas in which cither steel or coal were finance as an aid to reducing the critically lugh levels of unemplo ment which prevail there.

Adding Enterprise Zone 980 to the list of regional incer tives has allowed the government greater flexibility to pinpoint area for assistance. Crities maintain that the Enterprise Zone concept - in which companies are give ten years free of rates and requir only nominal planning permiss - is a blunt instrument. The ob jections raised are two-fold.

With such a concentration of incentives on an arco as small a 400 acres, a surrounding band many times that size will fall repidly into decline and create even inure inemployment. No less i criticism is that the benefits will not be passed directly to the com pany moving into the zones. In the absence of rates, freeholders will raise their rentals and reduce the nct saving to the tenant company.

Since Enterprise Zone status additional to SDA, DA or latermediate Area assistance, the are lucalities on mainland Britain - such as Speke on Merseyside which qualify for 22% grant, selective funding and a 10-year rates remission. These attraction pale into insignificance, however when compared with Northern Ircland incentives.

District Line.

therefore be in a position to calculate case careful control over the types

the Enterprise Zone luce

London Docklands haves

		s	measure replaced largely by 2	2% capital grants for bu	illdings, sisted area has s	genuine choi
REGIONAL STATUS	STATUTORY GRANTS	SELECTIVE ASSISTANCE (EMPLOYMENT)	SELECTIVE ASSISTANCE (OTHER FORMS)	EEC FUNDING	TAXATION EFFECT	NOTES
Special Dev. Area	22%: Ruildings Plant, Equipment	£8,000 maximum per job ereated	Coal-fired Boiler Scheme	Up to 50% Loans for fixed investment	, 100% Ist year allowance	
Development . Area	15%: Buildings Plant, Equipment	£5,000 maximum per job created	Product and Processor Development Sebeme	Nil	on plant	
Intermediate Area	Nil	£2,500 max. per job created	Microproceasor Application	*** ** \$000 Y *** ***	79% first year followed	
Non-Assisted Area	•	Nii	Microelectroniea Industry	Up to 50% Loans for fixed investment	by 4% p.a. on buildings except for amall industrial (100%)	
Nortbern Ireland	30-35%: Buildings Plant, Equipment	Negotiable with NID	Support Programme	ECSC funds where jobs are created in C		
Coal and Steck Closure Areas	Dependent on whether area is SDA, DA, IDA	Depends on reg.	Government factories (assisted areas)	and SC Areas	Grants in assisted areas dn not reduce capital expenditure for tax	I0 years' rate
Enterprise Zones	or unassisted region	· statutory grants	Training Services	Dependent on status	rellef except in NI when grant exceeds 45%	free minima planning requirement

Computer industry's vital role in injecting new life to London Docklands

cline had led to severe structural authority rates for ten years. unemployment. Relative to the depressed areas of Tyneside and Merseyside, London and the South-cast enjoyed full employ- Clydebank, one in Swansea and ment and required no positive as- one in Hartlepool, for example, sistance. Indeed, factory building within a large radius of London required an lodustrial Development Certificate aa a con-straint on indiscriminate expan-

It is ironic, therefore, that the most significant element in this government's regional strategy evolved from a speech on the Lon-Howe when the Conservatives were in opposition. introduced as o feature of the 1980 Budget speech, Enterprise Zones were conceived as a positive attempt st regeoerating carefully defined areas.

Second World War, successive governments confined their tegional policy to the "problem" areas of the UK, where industrial de-

The existing priority areas have attracted their fair share of Enterprise Zones. There is one on with a further eight zones taking shape throughout the UK.

Of these, the scheme developed for the Isle of Dogs is exceptional in that it is the first attempt by a government to attract new busi-

The London Dockland does not have the status of s development area, so that it cannot attract new business with conventional regional assistance. But the package of

Under the chairmanship of Ni-

corporation. Io that capacity, it was formally invited by the Department of the Environment last month to start procedures leading erprise Zone centred on the old West Indio and Millwall Docks.

The zone was offically designated in April and formally opened by Sir Geoffrey Howe on

There is little to suggest that the expanse of dock basins and dilapi-dated warehousing left vacant in 1980 will ever become a dynamic industrial centre. It is even less conceivable that the skills on offer from redundont London dockera

velopment Corporation.

For the area to regain and then In sharp contrast to the subsi-dies and grants ovailable in more disconnect Corporation is sustain a stable economic base, it is lands Development Corporation is



dustries are encouraged to move to the Docklands Enterprise Zone.

So often with "economic reviplans, the influx of business to a development area falls below expectations, in the case of the Docklands scheme, the optimism of the Corporation is already being borne out by the range and strength of the companies which have applied to move on to the

The film studios of Southern Television, for example, will be relocated there and will provide a nucleus for a "cottage" video and

In terms of the capital invest-

ment in the site, Telegraph Newspapers is perhaps the largest company involved in the project. It is estimated that close on £80 million will be involved by the time its site hus been developed and the plant installed.

With severe unemployment among teenagers in Tower Hamlets, there is every possibility of bringing local people into ancillary jobs on the site. To complement the commercial

activity in the Enterprise Zooe are plans for establishing a uational indoor sports centre within the Isle of Dogs complex. This is just one of the proposals designed to prevent the area becoming another dull and uninspiring iodustrial es-tate. The docks basins are to be left intact, for example, with quayside development along the lines of St Catherine's Dock.

For compaoies prepared to help develop the Isle of Dogs, the principal attraction must be the 100% write-off available on new buildings. Simplified planning procedures will greatly assist these firms and be an even greater incentive to the tier of smaller businesses needed to provide a balanced in-There will be no sterile extant of warehousing employing time on a robot stacker, and it area should avoid the mushrooming of ventures attracted only if the References 7 one intention dustrial profile for the area. It is envisaged that land for development will be available on ong-term leases, either for a single

ground rent. Central government curbs on local authority financing have been future — one in which the could ter industry could play a viral fulfollowed by sharp rises in rates. At a time when commercial rate-

payers - who are not shielded by n Whitehall subsidy - are faced with supplementary demands tea years' freedom from rates is a uaior advautage. The prospect of n daily journs, by road through the East End could take just a little of the glos

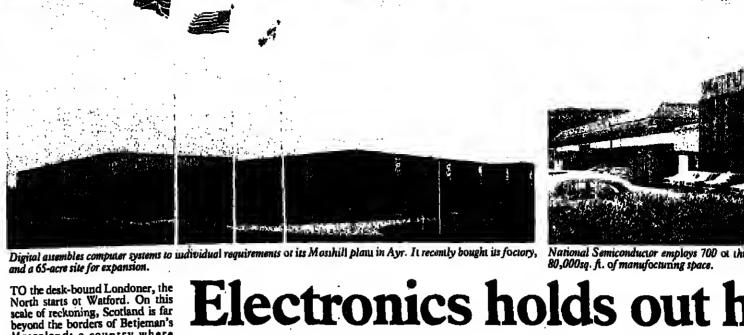
off an Enterprisc Znne job. Lor the West India Docks and outling plans for extending the nergot have been shelved. Conscious the implications that this confi have for employment in the arth the Docklanda Development Cor poration is currently submissions for a light rapid rans port system, which would link the Enterprise Zone with an underground line to the City. In the short term, an exorest coach service will be provided be tween the site and Mile End on its

With proximity to the cerate of London as its most obvious attraction, the Corporation is confident that demand from companies wanting to move on to the site will exceed the space available. It will therefore he was a valuable of the state of the st



Under competition from other which can offer the highest cash unique returns. The fact that some parts selling point is a good operating of Scotland do qualify for the high-

that of the Weish Development Agency — much in evidence through its television advertising campaigns. "We are tending to concentrate on particular sectors where we think Scotland has an established track record, a good basis of research and a first-class skill base. While we are keep to skill base. While we are keen to attroet computer applications, we do not have to employ non-target generalised advertising."



high technology to the region, the

cam with direct experience of the

the existing base of 200 companies

from this sector, employing mor than 40,000 people. In terms of

these companies' ''pedigree''
about two-fifths have their princi

pal operations elsewhere in the UK. A similar proportion are from

oversess countries, while the re-

Scottisb higher education has

long history of involvement with

Industry: its role is now shifting

rapidly towards advanced comput-

ing and electronics. Relative to

their English counterparts, the

country's universities have a

higher proportion of students in engineering, scientific and busi-

ness subjects. Edinburgh University, for

example, in closely involved in electronics through the Wilson

Institute, where research is cur-

tently being undertaken in inte-grated circuitry and artificial intel-ligence. The city's second university, Herlot Watt, Clsims

one of the oidest science parks in

Helping to establish links with the education sector is seen as a

prime task for Locate in Scotland

over the next five years. For a company moving to the region or attempting to expand an exist-ing site there - this practical as-

sistance complements the statutory and discretionary financial support available in Scotland. While

Locate in Scotland has no ir

development grants (a company qualifies simply by being there), the team can assist with the docu-

When funding is selective, cen

on a company demonstrating it

the support expansion would

The role of Locate in Scotland

particularly critical when Scottish

Development Agency finance is at

only a minority involvement in a company, rarely more than 25% of the equity. Where presence

shares are taken up, however, the

SDA may take up a significantly

greater proportion.
Under no circumstances would

the Agency seek to become the

majority shareholder, preferring instead to invest alongside com-mercial banks and insurance com-

her not take place, or it would

viability, and the fact that with

tral government resources

be in another country

luence in the payment of regional

Electronics holds out hope of recovery for Scottish people

Metrolond; o country where

shipyard cranes tower over busy dockyards and factory chimneys are the sign of a thriving manufocturing industry.

Few economic analysts North of the Border would agree with this impression of the excional economic and the excional economic and the excional economic account of the economic account of the excional economic account of the econom

impression of the regional eco-

nomy. Mounting unemployment is s grim reality, os traditional in-dustries rationalise or become un-

competitive in the face of subsi-

dised imports.

The problems facing Scotland

have, however, been recognised by

Whitehall's regional assistance

policy, Development Areas were

first established. These have

Special Development Area status

where conditions are most acute,

offering 22% capital grants and

comparable incentives for job

To the people of Scotland, the

ntly been upgraded to

electronics and computing indust-nes represent a real hope of recovery. By snracting a cross-section of companies representing the full spectrum of technology, the planners will svoid the pitfalls of a community becoming too closely sssociated with a single industrial

sector.
While financial incentives are a key factor in a company's decision to relocate, many components of Scotlond's "package" are available elsewhere in the UK. South and coal closure srea, for example, his access to the same funds from the EEC. Over in Northern Ireland, the financial budget is even stronger, although many companies would discount the cash bonus in the Province as a

For s company considering expansion in any of the UK's assisted areas, funds will be drawn from several sources. Apart from the sistutory development graots from the Department of Industry, there may be selective employment grants from the DoB and specialist

panies.

David Wilkins, marketing manager of the Locate in Scotland project, outlined the SDA's objectives in making an investment. "We normally look towards holding an investment for five to seven years, and then sell our stake back to the prime movers. We see her first the grants from the DoB and specialist funding from Europe.

The key to Scotland's marketing strategy is Locate in Scotland. Offering what the unit describes as "one-stop shopping", Locate in Scotland provides from a single source both the advice and assistance available to a company.

In making an information for five to seven years, and then sell our stake back to the prime movers. We see our funding as an influence in bringing people into Scotland, father than a subsidy — the SDA is required to make an economic return on its



a move in the right direction...

scheme is based on

a strategic location, design flexibility, competitive pricing and a very high standard of construction. All the Company's developments are close to major developments are close to major
business centres and growth
areas, with easy access to most
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companies.



Minister for Information Technology, Kenneth Baker (left) visits Antec West.

Lack of direct cash grants is no handicap to South-west

grants, European assistance or subsidised accommodation might appear an unproductive task. For the team at Bristol Economic Development office, marketing the velopment office, marketing the decision by Hewlett-Paekard to develop a 165-sere site immediate attractions of Avon County pre-sents a stiff challenge in the face of competition from South Wales, Scotland and the Irish Republic. Until the lifting of Industrial

Development Certificate requirements for non-assisted areas at the velopment officer for the City Council, maintains that regional end of 1981, Avon suffered an assistance has a relatively low priority in most companies' deci-sion to relocate. "When we talk to additional handicap in that new factory building was subject fo management, it becomes clear that the offer of finance is only attrac-

Abolishing Development Cer-dificates with the minimum of pub-licity from Whitehall has done tive if every other factor is right." little to improve industrialists'

suggests that direct cash grants are not the most important considerness to succeed in an area, it mes be able to draw upon the support Mike West, economic deof banks and insurance compane, and find experienced clerical and

Despite having the odds stacked

Easy access to other centres of

ommerce and industry in the UK

graphical isolation of Scotland and

the assisted areas of North-east England. A provincial sirport at Lulsgate provides limited facilities for airfreight, but Heathrow is directly accessible on the M4 motorway for international passenger traffic.

As a county, Avon is a product of the 1972 Local Government

Act. By far the largest of the six administrative districts within its

borders is Bristol - before the re-

organisation, a county borough

with total control over the facilities

it provided. Despite being stripped of responsibility for key

services, including education, the

city still dominates the economy of

A prominent feature of economic development in the area has

been the establishment of indust-

ries closely dependent on each other. Tobacco, packaging and printing evolved jointly and stim-

tilated the engineering industry producing machinery for these first-line activities. High taxes on

bacco products - and successive

health campaigns - have therefore taken a heavy toll on

local employment.

A second industrial grouping.

aerospace technology, provided employment in the area for skilled

technicians, engineera and support

stsff, but this cannot guarantee

long-term economic stability.

Once the home of the Concorde

project, British Aerospace at Fil-

ton is totally dependent on White-hall contracts. Public expenditure

cuts sre therefore refelected in the

To the local authorities in Ayon

County, attracting a handful of major high technology companies from a narrow sector of industry is

a two-edged aword. While

adically reducing surplus labour

capacity in the short term, such a

further problems if the structure of

were to change as a result of

over local development areas a South Wales." With a policy of office development during the 1970s, Bu tol attracted major insurance com panies to the city: the strength of the financial community in the is one incentive besvily promoted by West and his team. With Lon-don 70 minutes away by train, Bristol does not suffer the geocounty is exceeded only by Lo-

administrative staff. This is when

Bristol has distinct advanues

Land for factory developments the county is available from the local authorities, and from private industry releasing surplus site. The Imperial Group, whose Wilstobacco subsidiaries are control ing, and the Rio Tinto Zinc Carporation provide the major source of land in the private seems.
British Gas and British Rail an among the public authorities with property surplus to requirements

Serried ranks of factory units trading estate may be one solu which encourages companies a establish long-term roots in a tr gion. The Aztec West deelopment in Patchway, at its M4/M5 junction to the count of Bristol, has been designed to overcome the inherent objection to factory estates. A commercial development oo land assembled by tec West ("A-to-Z technology planned as 1.5 million sq.it of industrial and warehouse and a further 500,000 sq.ft. d

Guy Morton-Smith, development director of Aztec West, believes that the balance of induit rial and commercial, units will avoid a stereotyped trading estate

DEC is the first major comput supplier to take space at Ann. West, with a 24-year lease at 30,000 sq.ft. of office. The conpany has an option on a furth unit of the same size to cope we expansion. Since Digital uplanning to move its Brief branch and service staff to the state of the stat new business is not being brough officer Mike West is confident however, that the total l'envira ment" packege he can offer throughout the county will start

A combination of SDA, DA

ground for a provincial authority is in its approach to funding. Some £8 million of finance from county rates will be augmented by upwards of £40 million from the council's pension funds. Additional finance will be raised from private pension fund managers who can be persuaded that such an the board. investment would be in the in-

terest of their members. The role of the board is analogous to that of e merchant bank investing risk capital in a commercial venture - although the longterm objective is one of generating long-term capital growth rather than the steady rise in dividends normally required by the private

INDUSTRIAL DEVELOPMENT AREAS - 4

Relative to the appetite of West Midlands industry for new capital, the funds at the disposal of the Enterprise Board will make little west grade of sesistance.

Without the lure of 22% capital

impression on the region's industrial infrastructure. But even this grants, periods of rent free "sd- amount, without careful control, vance isctory" accommodation could be used to keep affoat companies for which there is no real

> For that reason, the approach likely to be favoured by the board will be to take an equity interest in the firms it is sesisting; maintain-ing the vital element of public accountability to the local suthority and county pension funds.

While the members of the Enterprise Board are appointed by the County Council - with elected councillors inevitably in the majority - there have been ap-pointments from industriolists and the trades unions. As the "professional" tier of the organisation, o permanent staff of between eight Set up formally in Februsty the board has as its prime responsibility the creation of new jobs by existing West Midlands firma. The idea is to identify companies with a long term of the organization, permanent staff of between eight and ten (headed by a former investment executive from Northeim Ireland) will liaise closely with the county's new Economic De-

velopment Unit.

This unit, whose task it is to work out the details of industrial strategy, will attempt to identify particular categories and size of business which will ensure a more stable pattern of employment in

assistance, the project is no dif-ferent from identical schemes into reality. A £500,000 budget for

Scots recovery hopes

From pege 17

Much of the skill in electronics that Wilkins hopes to draw upon is the product of earlier redundancies in electrical engineering. Employment is being taken up in the "professional" sector of electronics and microwave technology, for example), in cootrast with Wales where the emphasis has been on the consumer end of the market.

To Scotland. The New Towns can provide comparable land for building within their own territory.

For overseas companies moving o Scotland, the pool of trained labour is attractive: where such a firm brings its own staff, this is

Once settled in Scotland, however, families eojoy being there, according to Wilkins.

Important though staff resources are to a company, accomsources are to a company, accommodstion of s suitable standard is a prerequisite for a suitable standard is a out into sub-components and modstion of s acompany, accompressed in the SDA and the New Towns Development Corporation (Scotland involved in providing a range of factory types. At the most basic vance" factories which can be oeeds.

Custom building may be necessed at Ayr, where the factory was built into sub-components and aupplies. In Glenrothes, for example, we have a company making masks for the semiconductor industry."

Wilkins illustrated how computers are finding specialised spplications in Scotland, "Banking and founds transfer bas proved a growth area, with companies such as Fortronics, Burrotighs and NCR."

Scottish banks have progressed further in this direction than their English counterparts," he added.



large scale redundancies within Where the board is breaking new the development areas. And the panies now laying off staff: mas-sive capital injections are required to refurblsb obsolescent plant and replace outmoded working

example, a atreamlining of the motor industry has led to a sharp ncrease in the number without jobs: there are districts near Birmingham where the level of unemoloyment exceeds that in the probem areas of Scotland.

Unlike Scotland, Wales and the North-west of England, however, the West Midlands is not classified as s Special Development Area. Under the 1979 regional aid programme it does not even qualify for Intermediate Area status, the lowest grade of assistance.

and ready access to investment by Brussels, the whole of the West Midlands conurbation would be at a severe disadvantsge when trying to attract new enterprise to the region. The prospects for the area would certainly be bleak were it not for an initiative taken by the West Midlands County Council and the metropolitan boroughs within its boundaries.

Central to the county's strategy the area is an Enterprise Board, a public sector venture espital orgaisation that has been established

by the County Council. long-term growth potential, but which could well fail because of current economic conditions, or because they are constrained by being part of a larger and perhaps less successful group of com-

To the extent that the West the county, Midland Enterprise Board is set-ung out to find firms in need of day for the Enterprise Board, the

An important factor is that 30 jobs will be saved by the move one of the primary objectives of

Since the proposals for the Enterprise Board were announced in autumn 1981, many applications have been received, but no action could be taken until an entity quite separate from the council bad been created. With a unique form of with sources of capital have

centred on the safeguards to be applied and the board's investment It is not clear at this stage whether the practice will be to spread investment over a large number of companies, or to limit the funds to a handful of firms. There would be no reason wby the board could not take a majority

operational elsewhere in the UK. Where the board is breaking new to £3 million for the current year. scring as the nominee for the countries of the countries o The first investment decision has been taken: a loan which will convert to preference shares in the

Rarely is finance the only factor restricting the growth of a business, however: professional expertise is an equally valuable commodity. The board is proposing to make available the services of ex-perienced industrialists where this would be the most appropriate form of aid.

Allowing firms to expand at a controlled rate would ensure that the correct industrial and employ-ment structure can be developed for the area. Current levels of unemployment are undoubtedly excessive, but little would be gained by encouraging only those firms whose future is dependent

Industries in which there is s

decade. Recognising the impor-tance of a technological base to the

regeneration programme, Bir-mingham City Council is pioneer-ing a Science Park in partnership with the University of Aston.

The project is centred on a 31/2-

acre aite purchased by the City Council adjacent to the University.

On half of the site, the existing

velopment within the framework of the project. There will be direct involvement by University staff in the comhigh labour content involved panies on the site if required. anufacturing, test and assembly offer perhaps the best hope for the West Midlands during the next

Reviving the shattered economy the West Midlands will not be an easy task: the success of ventures like the Enterprise Board and the Science Park will not become apparent for a decade or more. But of all the regional aid schemes in the UK, these projects stand the greatest chance of success - be-

factories are being retained as shell units for small firms. The build-

ings will not be divided into smal-

ler units (from 500 to 10,000 square feet), until users have been identified. The emphasis will be

on laboratory and office accom-modation for high technology

Computer resources will be available "on tap" to the site from the University, which will provide

academic support facilities for the firms involved in the project.

For the Science Park to succeed,

it must also be able to attract firms

which want to build their own

premises, but draw upon the Uni-

versity's resources. Half the pre-sent site for the centre will be

cleared to allow independent de-

cause the driving force comes from within the community they serve. Above all else, it is a question of

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Registration of delegates hn MacGregor MP, Parl I Under Secretory of State for Industry The role of the dearing boni Geoff Taylor, General Manager FFI Group John Robertshaw, Olrector, United Computers & Technology Trust Business Pion: what to prepare and how to present it Kevin Cohill, Associate Editor, Computer Weekly Rolsing tha manoy: experiences of two computer companies Eddie Bleasdale, Manoging Director, Aleasdale Computer Systems 1td Naom: Langlat d Wood, Joint Managing Ofrector, PME Ltd

Ron Weedon, Managing Director, keen Computers 1 Id

technology is no guarantee to viability, as the failure of the Nexos office systems project in Bristol has illustrated. Drawing a cross-section of electronics and computing com-panies into the area is the prime objective of Councillor Claude Draper. As leader of Bristol City Council, end chairman of the Economic Development Board, he has a dual responsibility for attracting new business from the UK and

overseas.

Draper emphasises the importance of Bristol as a commercial centre capable of supporting com-panles that the Development Office is attracting. "For a busi-

real investment and new job of

To the South-west of Ave-away from the established indusaway from the established under rial environment, the prosperd attracting high technology integrated of road and rall travel increases of proportion to the extra disingular tion in the region. Tourism tellow rarily decreases the level of integration and the labour for available to a prospective employ lacks the blend of industrial available to a prospective employ lacks the blend of industrial available to a prospective employ lacks the blend of industrial available to a prospective employed as the blend of industrial available the UK microelectronics industry foreign competition, Merely to be involved in high

intermediate area status is the attraction; that Devon and car attraction; that Devon and car wall can offer the individual For a computer company sldering a move to the South the balance of incentive in wards the County of Avon wards the county of Avon immediate environs; government

immediate environs govern

ing within their own territory.
When taken up by a company, these sites are often "advanced ser-

usually only for specialist assignments on short-term postings. UK companies will attempt to relocate their own staff wherever possible, but may face opposition from the workforce.

Description of the structure of the business it attracts

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Programmers.

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The positions available are for Programmers and Programmer/Analysts offering between one and three years experience of COSOL development. This will ideally be on ICL 2900 systems and experience of IDMS,
TPMS and VME/B will, of course, be
advantageous although it is certainly not
essential. The persons appointed will work on a
variety of interesting systems including
Inventory Control, Sales and Manufacturing and
will use on-line and data-base facilities for which appropriate training will be provided.



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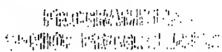
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TEXACO

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Ta succeed in the ail business you need to recognise the benefits of advanced technology. TEXACO uses powerful configurations of camputer hardware and software in the world-wide discovery, production, refining and distribution of the most important natural product of our time. New methods of automation are continually being sought. The London installation comprises IBM 4341s running under DOS/VSE, CICS and DL/1 with one machine hav-Ing VM/CMS. In addition, the department has access via TSO and IMS to an IBM 3033 under MVS in Germany and extensive use is made of database, on-line and networking saftware.



to £9,500

COBOL Programmers are needed at varying levels of seniority with a minimum requirement of two years IBM experience on either OS or DOS systems. Knowledge of structured programming techniques, IMS databases or CICS would be a distinct advantage. Successful candidates will join one of several major new projects under development and they will also assist in the support of production systems.

After a period of familiarisation, the senior positions also offer responsibility of leading a small programming

AMAILYSTIS SENIOR ANNUTATION to £13,000

With a high level of user contact, these outstanding career opportunities are available for people with four to six years previous computing experience, a solid COBOL programming background and who have moved into an analysis and design role.

The persons appointed will be responsible for all aspects of major project development from specification to implement the project development from specification.

to implementation. Previous experience of IMS and/or CICS would be a distinct advantage.

Texaco wishes to appoint two people with experience in designing and implementing database systems and at least one must have a sound technical knowledge of either IMS or CICS/DL1. They will operate in a small team and their main activities will be:

POZNITANISTANISTA ZAROMANIANIESTI REZERTO DORRO

to £14,000

The plans are to replace the 4300s with a new generatian

IBM 3080 series machine and transfer all systems to

Word-processing equipment is Philips 5002/3 and Data General Eclipse minis are in use for interactive scientific

and technical applications. A CASE MSX II message

switch processes telex messagex around the world. An IBM 3750 computerised telephone exchange is installed in London and twa Plessey PDX exchanges are in ather

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to £13.000

The successful applicants will join a team of systems

programmers supporting the existing software which includes DOS/VSE, VM/CMS, CICS, DL/1, SNA, VTAM, RAMIS II, etc., and evaluating/implementing new packages for the U.K. and six other European countries. Candidates should therefore be prepared for

some foreign travel.

When the IBM 3080 arrives, all systems will be converted to MVS and therefore full training will be

provided in the intervening period, making this an ideal

opportunity for DOS Systems Programmers to expand their skills. The U.K. use of the machine in Germany is

currently supported by the technical group in London.

- development and introduction of standards
- database design and implementation
- assuring security and integrity
 application development support
- performance monitoring and tuning
- education in database techniques and data-

All employees are covered by a benefits package commensurate with other major all campanies (contributory pension scheme, 35 hour week, £1.85 per day LVs, etc) and their offices are located close to Knightsbridge undergraund station and to Hyde Park,

Far further infarmation and to arrange an early interview, please contact our cansultants, Myriad Appointments, at their Londan office (01-353 0981).

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University of London Computer Centre

Systems Integration

The University of London Computer Centre provides a Netional Computer Service to universities throughout the country. The Centre is equipped with Control Dete 7600, 6800, 6400 and Cyber 72' computers and has recently installed a 16 Mbyte Amdehl 470/V8 processor. A CRAY 15 processor will be installed in 1883 and can already be accessed at 8 eepstate location. A now Natiwork Communications System is under development to support a large network of remote batch and keyboerd terminets with eccass to other public and private natworks. The Centre has adapted the X25, Triple X, FTP and JTMP communications atanderds.

The Centre wishes to recruit a Systems Programmer with at least 2 years' expansince in programming on either large or mini computers. The successful applicant will join a team of systems programmers working on Systems integration within the Operating Systems Department. Duties will include integration and monitoring the reliability of the running production systems.

les with knowledge and/or interest in tosting and main-Notwork Communications Systems soliwate will be pre-

Salary commensurele with aga, raievant qualificellana and expo-lenca will be in the rango £6070 to £10575 [undor reviaw] plus £1035 London Allowenca.

Further details and application forms are aveileble from the As-alstant Secretary, ULCC Guilford Street, London WC1N 1DZ. Tate-phone 01-405 8400, extension 341.

Applications close three weeks from the dete of this advantage

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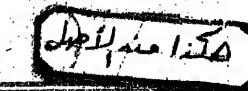
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CW22

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world of scientists. Candidates must have previous experience with VAX1 1-780, be a good organiser and communicator as well as having B wide knowledge of hardware. The company has a very positive

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Candidetea must be ebla to demonstrate that they have seen projects through all the stages above and are able to communicate effectively with all levels of staff both verbelly and in writing. Experience of YME/8 is an edvantage but le not assential.

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Oue to e melor expansion programme, and instellation of IBM System 34's in each of its fectory locations this leading company in the electrical industry is locking for a Chief Programmer, locations this leading company in the electrical industry is locking for a Chief Programmer. Substantial RPG II expensive and familiarity with IBM SYSTEM/34 softwere and utilities are substantial RPG II expensive and familiarity with IBM SYSTEM/34 softwere and utilities are substantial RPG II expensive and responsibility for the maintenance of all softwere.

Ref: \$3878

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A Nationally renowned Insurence company is looking for further Systems Analysts and Programmera. To enhance its development teems, using large ICL 2900 machines. Ideelly the Systems Analyst should have 2 to 3 years experience, with exposure to Datebese Systems, good experience of systems design in Financial or Menegement Infurnation Systems enris a COBOL background. The Programmer requirement is for persona with a minimum of 2 years ICL COBOL experience utilized within a VME or DME environment, working with financial applications. Selectes are negotiable and relative to experience and all positions attract a generous benefits package which includes MORTGAGE SUBSIOY.

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An Anelyst/Programmor is required by a leading city beed bursau, dealing mainly with finencial/benking applications. They are looking for confidence, ambition and an IBM GSO background, utilising RPG il and iii. Good potential for progression to \$38 and into \$yelama Analysis is offered for the selected condidete. So, if you have 2-3 years RPG experience and would like to be involved in the development of bureau applications in a progressive company, please contect us immediately.

Ref: \$3947

ANALYST/PROGRAMMERS

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C.£9,000

A leading engineering company are looking for 2 Analyst/Programmers with an IBM SYSTEM 34 or 38 beckground. An experienced RPG II or III programmer who would like to move towarde Systems Analysis, would be ideal. Excellent promotional prospects are offered, and a package including ennual bonus and non-contributory pension is eveilable.

C.£9,000

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This BANK in Central London is looking for a Programmer/Analyst with approximately 18 months to 3 years experience in an IBM GSO environment utilising RPG il and III. The selected candidote will be required to work abroad for 10-12 weeks of the year and will receive an attractive "Banking" peckage, which includes a generous mortgage subsidy. A high standard of education (preferably degree) is required, and experience of benking applications advantage.

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SECRETARIAL

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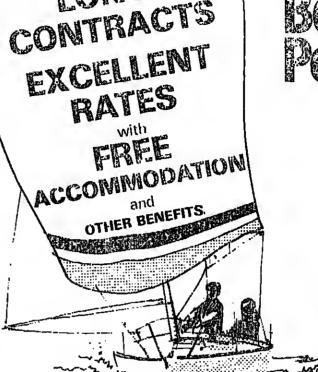
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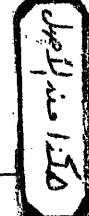
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Pravious exparience should also include operating in an installation with a major on-line TP facility with a demand from users for high service levels on that system.

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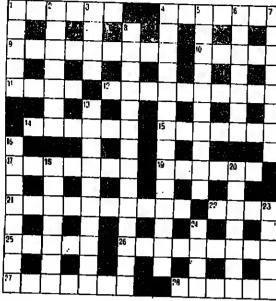
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awful moaners (7) Topless cages for birds?

by way of going round

Chaps having a row are

Oh dear, I've blun-

Assured I'll have an es-

sociate, between you

Surprisingly, I'd get

Danes sppointed (t0)

cruise? (3-4)

Pew rent procuring a

Unhsppy about helf-

dollar that is paid

monthly? (8)
Luxury in hotel room?
Awfully bad if sent after

an interval (9,2,3)

Drink with journalist

Paid back Russian edi-

Big holes right inside

cases (7) Verifies, from what we

hear, money orders (7)

Revolutionery uplifted by the race (5)

Rettest, showing

natural sptitude when losing head (4)

without enjoyment

ACROSS

1. Five rings produce

4. They make digeste of laws, transferred to 9. Fight by the club to get metal for recycling? (5-

10, 11. Portable weapons that pyginies heve? (5-

t2. A master delayer, a lead swinger (10) 14. Swallow's no good

when sucked into eirpipe beckwards (6) Illustration used in test to please? Not half! (7) 17. Gets free cloaks after 'e

oine Sneiety (7) 19. Long narrow cut mede by t-turning implement, we hear (6)

21. I'm a uun involved with

race, contrary to US in teres18 (2-8) 22, 25. The men to write to for a turban? (4.5)

26. What makes William keen, by the sound of it, 27. Longed to have teacher 24.

caught in the act (7) 28. Worthless stteinpt to cerry tree (6)

RULES AND CONDITIONS

-20.

2. The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press ttd, soy printers employed by them or the near relatives of any such staff.

3. The solution of cach puzzle will normally be pub-

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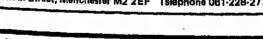
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Failure to train

SALES BIT I

seles and management training to a broad selection of computer companies. Perticipants undoubtedly Well trained, accom-plished sales personnel are gain considerable benefits from these courses which now such a rare commoditity that many companies find themselves paying "over the odds" for less than cover a wide variety of adequate performers, and as the focustry continues to ex-Yet wheo I observe the pand the problem worsens

computer industry at large I at an ever-increasing rate. am astounded by how few This failure hea not sprung from the economic commitment to seles training. Of those which years but from the coroplamake such an investment, cency and neglect of manmaoy do so in an impulsive agement across the industry Even the completely

trained and thoroughly ex-perienced salesman needs

regular training. Between

two and four weeks every

between product, applica-

tions and selling discipline.

However, it is important

to consider the broad impli-

cations and objectives of training rather than just the

Sales training must revita-

tise and consolidate the con-

fidence and capabilities of

Training must be well or

canned and stimulating,

main topic.

and haphazard manner.
"We've got a new alesman starting next week. We'd better tee-up a course "Fred Jones seems to be

having trouble getting ap-pointments. May be we snd should contain a balance should send him to a course on telephone techniques!". "The ABC sales training company say they are running a course on letter writing. Who can we send?"

Relative to the number of omputer companies in operation only a small nimber trave any format plan for training, and even the individual as well as fewer have the appropriate reinforcing the "espri de funncial approval within corps" of the whole sale. their sales budget. Yet even team. at this level t am only talking about training for established salespeople refresher courses, product-

professional enough to gain the respect, even admiratraining, and so oo. tion, of att participants. When it gets down to Setespeople should complete totally comprehensive a training of inexperienced thusius in to get into the field thusiusin to get into the field confident of success and salespeople there are probably no more than tour comkeen to try new-found skills in a "real life" selling enpanies within the industry which have both the copability and commitment to be How often does that able to take in raw recruits occur, even within those and turn out thoroughly trained professional sales companies which acmaily make o commitment to

people. From my day-to-day extraining? Not very often,

algorithms, software protec-tion, speech systems, som-dardisation and releted top-tics will be discussed.

Accommodation will be available. Details from Mrs Jill Stern, Administrative Assistant, tel. Halfield 68100, extension 386.

Training salespeople is not casy. They are always very demanding atudents, usually attentive and con-■ WORTHING, Sussex, is structive, but also perceptive and questioning people the venue for the courses offered by MSS in June and July. They include Word Processing in the Modern the trainer and the subject matter as well as the men-Office, June 24-25; Advanced RPG II Programagement and organisation of

ming, June 28-30; Database
Concepts, July 1-2; Computer Appreciation for Senior
Executives, July 1-2; Computer System Design and Implementation, July 12-16;

They have little tolerance for the inadequate tutor, be he an external consultant or a direct superior.

It is always necessary to stimulate the interest and Cobol Programming for the Experienced Programmer, July 19-21. More information from the Course Registrar, MSS. House, 54 Chapel Roed, Worthing, West Snasex BN11 1BE. Tei: Worthing (0903) 34755/6.

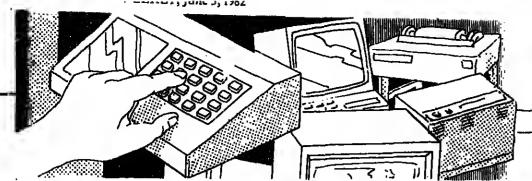
the educational procesa.

writing about the implica-

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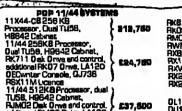
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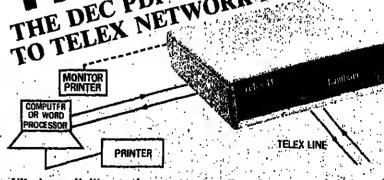
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